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RESEARCH REPORT

A PROPOSED AIR FORCE FORCE STRUCTURE FOR LOW INTENSITY CONFLICT

LIEUTENANT COLONEL WILLIAM J. KOHLER, JR

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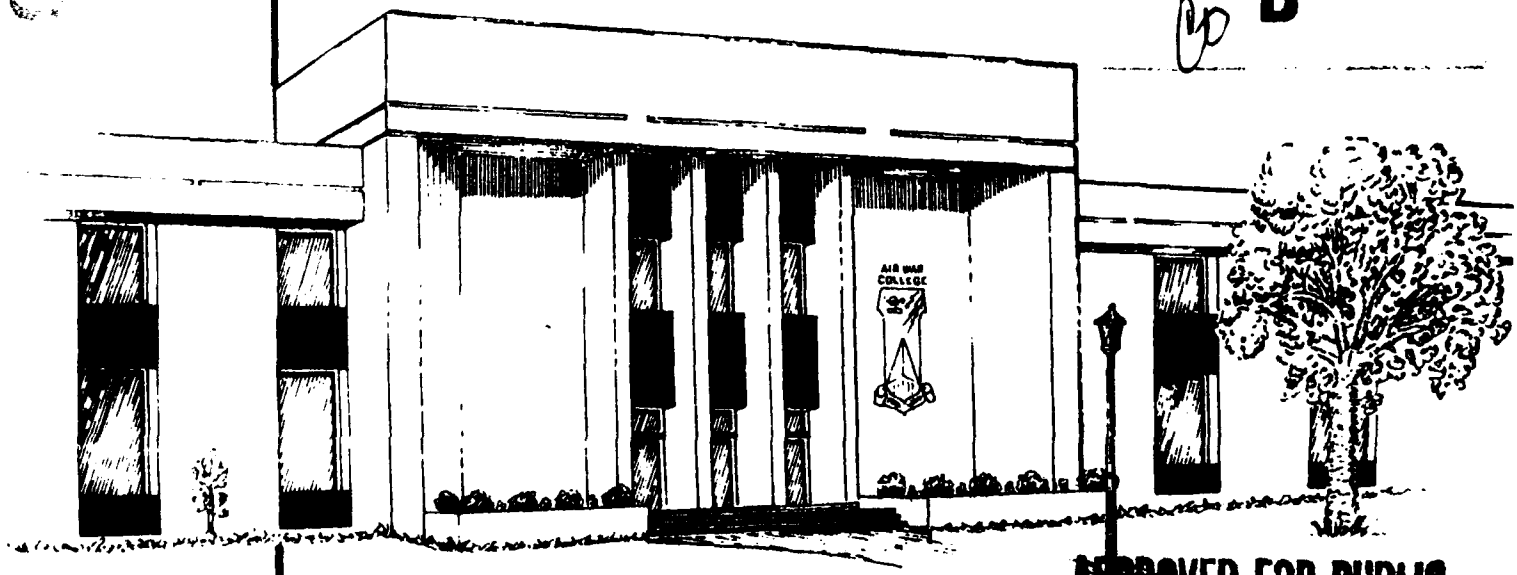

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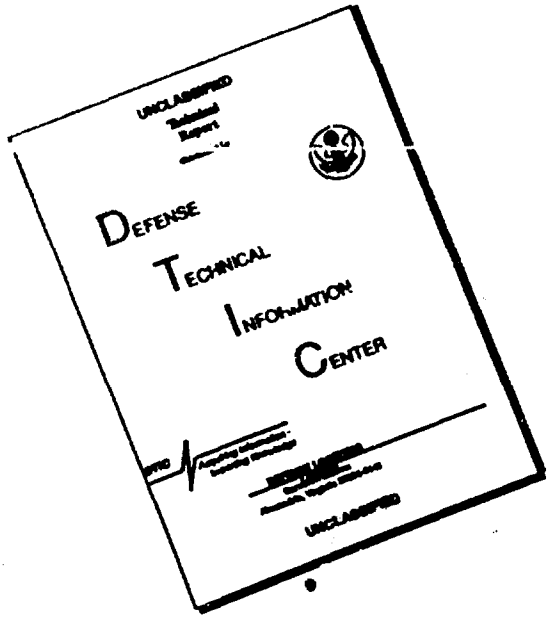

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A PROPOSED AIR FORCE FORCE STRUCTURE FOR LOW INTENSITY CONFLICT

by
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A DEFENSE ANALYTICAL STUDY SUBMITTED TO THE FACULTY

IN

FULFILLMENT OF THE CURRICULUM

REQUIREMENT

Advisor: Colonel Gary M. Musgrove

MAXWELL AIR FORCE BASE, ALABAMA

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EXECUTIVE SUMMARY

TITLE: A Proposed Air Force Force Structure for Low Intensity Conflict

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The paper describes the future key potential sources of conflict. The potential sources are then overlaid on various regions of the world that are prime candidates for future conflict. Since most of these regions are comprised of Third World Countries, the highest potential for conflict is Low Intensity Conflict (LIC). Therefore, the paper analyzes the various types of LIC that the United States may confront. The types of LIC are analyzed using past scenarios that we were involved in to highlight the constraints that the United States military may have to operate under in future conflicts. Finally, the paper evaluates our capability to prosecute a military action at the higher end of the LIC spectrum, that being limited conventional war. This then leads to a proposed force structure that would give the Air Force the capability to respond to a limited conventional war. This is the proposed composite wing.

BIOGRAPHICAL SKETCH

Lieutenant Colonel William J. Kohler Jr. (M.P.A. Auburn University) has held various positions in the acquisition and logistics career fields. In his last assignment. as the System Program Manager for the Peacekeeper and Small Intercontinental Ballistic Missile, he was responsible for the development and implementation of logistics support concepts for the systems. He has held logistics positions at all levels and in every phase of the weapon system life cycle from acquisition to disposal. He is a graduate of Squadron Officers School, and the Air Command and Staff College. Lieutenant Colonel Kohler is a graduate of the Air War College, class of 1989.

TABLE OF CONTENTS

INTRODUCTION

The Spectrum of Low Intensity Conflict (LIC) is very large. It includes everything from political unrest to conflict short of conventional warfare. The various complex potentials for LIC exist throughout the world. The capability to respond to the full spectrum of LIC requires highly specialized forces and a force structure that is significantly different from the structure that the Air Force has now.

This paper will address the potential causes of LIC. Assess the regions of the world to see how those sources of conflict apply to the various regions. Discuss the various types of conflict and the responses that we may have to employ. Finally the paper will propose a new force structure to fill a gap in our current capability to respond to higher levels of LIC.

CHAPTER 1

POTENTIAL SOURCES FOR CONFLICT

Low Intensity Conflict (LIC) covers a broad range of the conflict spectrum. Table 1 shows the spectrum for armed conflict. The continuum contains the elements of force from the advisory level through to nuclear war. The main segments that are classically called LIC extend from employment of force (non-combat) to Vietnam type conflicts. Over the last two decades the United States has had to contend with all levels of LIC and the prospect is that we will have to deal with LIC to an even greater extent. Therefore, let me address the specific areas that this paper will focus on. To do this I will discuss the criteria that I used to assess the most probable type of conflicts that we may face in the future.

The criteria that I selected fall into four general categories. They are as follows:-

a. The potential sources for future conflicts.

b. The types of conflicts that are possible in the future.

c. The areas of the world where these conflicts could occur.

d. The possible constraints that the domestic and international communities may place on our capability to respond.

I will discuss the primary considerations associated with each of the criteria, and then present a general assessment of the

combined effects of the criteria.

There are seven potential sources for future conflicts. They are:

a. Cultural differences.

b. Soviet interest in expanding their sphere of influence.

c. Competition for control of scarce energy resources.

d. Competition for control of ocean resources.

e. Competition for control of scarce strategic materials.

f. Proliferation of conventional arms transfers.

g. The proliferation of nuclear and chemical weapons in the world. (1)

These are complex issues and I will provide a brief discussion of each of them.

Cultural differences are a constant source of conflict. The main reason for this is that, cultural differences develop over long periods of time and do not change over a short period of time. Therefore, they will continue to exist. This is not to say that they will result in violence, but coupled with other aspects they could support future conflicts. There are many examples of cultural conflict. Splits within the Islamic religion cause conflicts between nations and within nations. For example, Iran and the better part of the rest of the Arab states. Territorial disputes between Pakistan and India are religious disagreements that date back to the initial days of

independence for both nations. The list of specific examples is endless but the key point is that they have a potential to spark conflict.

The Soviet interest in expanding their sphere of influence is primarily based on trying to diminish the influence of the United States in the world. It would be a gross overstatement to say that the Soviets are at the heart of every conflict in the world, but they are not adverse to aiding conflicts that enhance their own objectives. (1:10) The Soviets will avoid direct confrontation with the United States but they will aid insurgencies that will give them greater control in a given region. This control includes access to resources such as food and minerals, and exclusive use of air routes and waterways. (1:11) The Soviets are not as dependent on outside sources for resources as the West but by denying access to key materials they can cripple the western economies.

Conflicts over energy will be a prevalent possibility over the next decades. The conflict can take two forms. The first being, a means to another end and the second being an end in itself. (2:31) A classic example of an energy conflict as a means to an end was the oil embargo of 1973. The Organization of Petroleum Exporting Countries (OPEC) created an oil shortage by limiting production. The net result was higher oil prices and increased world political and economic influence. (2:38) This type of energy conflict will be even more crucial as the

nonproducing third world nations try to compete with the developed countries for oil. (2:30) In 1973 many of the developing nations faced price increases of over 800 percent. By the year 2000 these countries will need over 35 percent of the world's oil production. (2:39) This could result in heightened conflict between the developed and developing nations. The second form of energy conflict is a by-product of the first. This is a direct attack on an energy target(s).

This type of energy conflict is probably the most likely form of energy conflict. This is true for two reasons. First, energy installations are vulnerable and the effect of destroying or damaging them can have quick and far reaching consequences. Second, energy is a critical part of all economies and its destruction can to focus attention on other social issues. (2:32) Examples of installation vulnerability include the Israeli attack on the Iraqi nuclear plant, the 1965 US Northeastern power blackout, and the vulnerability of offshore oil rigs as shown in the Persian gulf. This is even truer in the developing nations because many of them are reliant on hydroelectric plants that are in remote locations. Not only is the plant itself vulnerable but the transmission lines are impossible to secure. (2:34) The second type of energy disruption conflict is closely tied to the means to an end type of conflict. If an insurgency group can eliminate or disrupt the major energy resources of a country or region they

can have not only a local but international impact. This would then focus public interest on the issues that they are trying to highlight. Closely aligned with the energy issue is the competition for ocean-resource.

Ocean resources present a unique issue to the world. Unlike land, where the boundaries are clear cut and the associated mineral rights are not open for dispute, the same is not true for ocean resources. Most nations subscribe to the twelve mile territorial waters limitation, therefore, there are few disputes in this area. The disputes arise from four main ocean resource issues. These are deep-seabed mining, lateral, adjacent, and opposite ocean-boundary disputes, offshore resources of the continent of Antartica, and finally the threat of terrorism to international shipping and offshore installations. (2:44-47) Each of these issues is very complex but for the purposes of this paper I will only outline the major aspect of each issue.

Deep-seabed mining involves the exploration and removal of large deposits of manganese, copper, nickel and many other strategic materials. Estimates state that these reserves are so large that three mine sites could supply all the United States requirement for the rest of the next century. (2:43) The key issue revolves around the ownership of those rights. Many of the developing nations contend that they are a "common

heritage of mankind." This means that no nation should have sole control of the area even if they developed it. (2:45) The developed nations who have the technology to exploit this resource feel that they should have exclusive rights if they develop the resource. The United Nations Conference on the Law of the Sea (UNCLOS III) is working the issue but there is a high potential that the outcome will not be favorable to the United States position, thus the potential for conflict. (2:46) The deep-seabed issue is an example a of long term ocean resource issue. The costal boundary disputes are an immediate problem right now.

Over the last two decades there are countless examples of costal disputes. These include extensions of fishery zones to 200 mile limits and control of ocean littorals over the continental-shelf seabeds. Over two hundred conflicts currently exist. (2:47) A classic example of this type of conflict is the disagreement between Greece and Turkey over oil and mineral rights in the Aegean Sea. (2:47) This could put the United States in the middle of a conflict between two of its allies. As the developing countries begin to expand their own horizons this will only increase as a potential for conflict. A prime example of the increased potential is the Continent of Antartica.

The continent and the offshore issues associated with Antartica are very similar to the issues over deep-seabed

mining. Many of the developing countries view this area with the same "common heritage of mankind" policy. (2:47) Again, the developed countries that have the ability to exploit the area feel that they should have exclusive rights if they develop to resources. The two aspects that may serve to minimize the potential for conflict are the location and hostile environment. They also increase the potential for terrorism if a nation decides to exploit the region.

Terrorism is a real threat in the ocean resource area. I say this because the sea-lanes, and the various drilling and mining operations are highly vulnerable to attack. This is true for two reasons. First, the isolated location make them difficult to defend. Second, the installations themselves are very complex and are easily damaged. Many of the arguments that were applicable to the argument under energy crisis are also applicable to the ocean resource. The same is true for the next potential source of conflict.

Competition for strategic materials will continue to be a prime source for potential conflict. The form of the conflict could be quite different, but the out come would be economic chaos, which will spark political and even military responses. As with energy as a potential source of conflict the scenario for strategic materials would focus on denial of access or control of the source itself. Four possible scenarios are

highly possible. They are as follows:

a. A move to control the sources external to a given nation so that the nation can guarantee its own economic security.

b. A move to deny access to key materials.

c. A change in the political attitudes of a supplier nation that results in that nation using its strategic materials as a bargaining tool.

d. An internal conflict over the control of strategic resources so that a group can further its internal objectives.(2:49-50)

These scenarios are very similar to the energy competition scenarios. The methods for denial and or gaining control of strategic resources would be the same. There are examples of these scenarios through out the world.

The first two scenarios are evident in Africa. Three countries are responsible for the production of over fifty percent of the world's critical strategic materials. They are Zaire, Zambia, and Zimbabwe. (1:12) To say that these countries are stable is an understatement. There is a high potential for world economic instability if these sources are denied to the West. We are all aware of the constant threat to these countries from the Soviet and Cuban backed forces in Angola. (1:12) Another example of denial but more in the vain of the last two scenarios is Bolivia. Bolivia relies on its

exports of strategic materials for its economic survival. Bolivia can not maintain access to Chilean ports because of political and economic disagreements between the two countries. (2:53) The potential exists for other countries such as Peru and Brazil to intervene in the disagreement and escalate into an armed conflict. (1:12) Thus, the competition for strategic materials is as a source of conflict is already confronting us and will only increase as developing countries begin to vie for additional resources. As the potential for armed conflict increase as a result of competition for scarce resources so will the desire to have the necessary arms to successfully prosecute the conflict. Thus, the reason for the expanded arms transfers.

There are three key characteristics associated with the increased arms transfers. First, is the unprecedented rapid increase in arms transfers. (1:12) The characteristics of this rapid diffusion are alarming. Over 75% of the arms transfers have gone to third world countries. (2:60) The weapons that the countries are buying are more sophisticated and often enter new areas where large sales had not previously taken place. These include chemical and biological weapons. Second, some third world nations are producing and exporting weapons. These include Brazil, Argentina, and Nepal to name a few. Over thirty third world countries are producing and exporting arms. (2:63) These countries are using the revenues from these transfers to

subsidize their own defense needs. For example, Brazil annually exports $1-billion worth of arms. (2:64) This leads to the final characteristic, that being control of arms transfers. With the ever increasing number of suppliers it is difficult to get concurrence on a worldwide arms transfer policy. The new third world producers view proposals by the traditional supplier nations as an attempt to try to push them out of the market. (2:76) The dominant suppliers also have domestic pressures not to reduce arms exports because of the strong arms lobbies in their countries. (1:13) With these characteristics in mind I will now address how they can be a potential for future conflict.

The increased arms transfers can contribute to but not be a sole source of potential conflict. I say this for two reasons. First, the increased transfers give the third world nations a perceived notion that they can exercise their national purgatives without fear of being totally vulnerable. Thus militarizing the nation serves to complement the political and economic growth that the countries are striving to achieve. (2:75) On the other hand it is also diverting resources from other needs and could be destabilizing. A second feature is the decision to transfer arms to a country. Just the threat to transfer or cut off transfers can have the same effects of increasing stability or instability. Two regions are prime examples of potential instability if arms transfers were cut

off by the United States. These are the Middle East and Northeast Asia. (2:76) This leads to the final potential for conflict.

Proliferation of nuclear weapons has far reaching ramifications. Many nations have a nuclear capability or have the potential to get a capability. (1:13) The difficulty associated with nuclear proliferation is in determining if a country can construct and deliver a nuclear weapon. Most nations admit to conducting research for "peaceful" reasons. It is not an easy step to move from reactor type projects to manufacturing weapons but if you have the personnel to do the former they can do the latter. Often times the uncertainty of not knowing if a nation has a nuclear capability has a greater potential to cause conflict than knowing that they do. (2:85) A more pressing concern over proliferation is that terrorist factions may obtain nuclear weapons and use them. (1:13) This I feel would be the most serious potential for conflict. With the various potential sources of conflict in mind I will move into the next part of this chapter which deals with the discussion of the potential types of conflict.

The types of conflicts that we may face in the future are characterized in many different ways. Dr. Sam Sarkesian lumped all LIC into two general categories, that being special operations and revolution/counter-revolution. (4:15) Special operations were surgical, hit-run and rescue types of

operations. The other category consisted of more extensive support to in-country operations by the United States. (4:16-18) Mr. John Blodgett broke LIC down into four types of conflict. They were psychological warfare, terrorism, proxy warfare, and rescue operations. (1:14-17) He stated that psychological operations used by the Soviets and their proxy states are designed to breakdown the enemies will to fight. (1:14) Terrorism will initially be the primary mode of LIC. (1:15) The follow-on mode is proxy warfare which is nothing more than support of a open conflict by outside sources. (1:15-16) Finally, he discusses rescue missions which are self explanatory. The Joint Low-Intensity-Conflict project team developed definitions for the types of conflicts. They divide LIC into four different categories. They are:

a. Insurgency - a movement to overthrow a government.

b. Counterinsurgency - actions taken to stop an insurgency.

c. Terrorism counteraction - actions taken to counteract terrorism.

d. Peacetime contingencies - actions taken to restore peace in an area. (5:1-3)

I feel that this set of definitions provides a more definitive set of potential conflicts than the previous two, so I will discuss them in detail.

Insurgency is an armed political struggle that can take

many different forms. It is usually evolutionary and may skip different phases depending on how successful the previous phases have been. The basis for most insurgencies are a political or ideological difference between the ruling government and a segment of society. (5:4-3) The underpinning strategy of most insurgencies is shown in table 2. With this as a basis the insurgent group will begin to mobilize the revolution. Most insurgencies follow the prototype phases shown in table 3. History has already shown us that this is the prime type of conflict that we will face in various regions of the world. It arises from the consolidation of dissatisfaction over the sources of conflict that I discussed in the first part of this chapter. Insurgency by definition leads to the next type of conflict, that being counterinsurgency or stemming the insurgency.

Supporting a counterinsurgency is more difficult than supporting an insurgency. The insurgent has already established a base of support. This means that the group seeking to stop the insurgency has already lost popular support and must take the necessary action to re-establish its popular base among the insurgents supporters. (6:183) This requires much more careful planning and evaluation of the "perceived" reason for the given action. Thus, a successful Counterinsurgency program must follow the same phasing outline in table 3 but a more in-depth analysis of the desired

outcomes, perceptions of the populous of the means used, and a genuine willingness by the ruling government to understand the motivations behind the insurgency and take actions to remove the political, economic, social or military source of dissatisfaction. (5:4-12) The same caution must be shown by any outside country seeking to support a counterinsurgency. A final note on counterinsurgency is that to execute a successful program takes more time and patience than to execute an insurgency. (5:4-13) Closely aligned with counterinsurgency, in difficulty to combat, is terrorism.

Terrorism was best defined by Mr. Paul Johnson, when he stated that terrorism is war against civilization. (7:3) The groups that employ terrorism see it as a form of guerrilla warfare that allows them to avoid contact with formal military organizations. (5:5-1) Terrorism is the most difficult form of LIC to confront, I say this for two reasons. First, it is difficult to muster public support for a cohesive antiterrorist, and counterterrorist program. (5:5-2) Second, the identification, tracking, and exploitation of all terrorists groups is difficult and expensive therefore we must define the level of risk that the United States is willing to accept and structure our policy accordingly. (5:5-9) This level of LIC is also the most prevalent threat faced by United States forces when supporting peacetime contingencies.

Peacetime contingencies cover the whole range of operations outside of the scope of conventional warfare. (5:6-1) There are five primary types of actions that fall into this category. They are humanitarian assistance, noncombatant emergency evacuation, military presence, peacemaking, and strike operations. (5:6-2) Though similar in their general nature each has certain features that make the action different from the others.

Humanitarian assistance is the use of military forces in quick response to a disaster. These include natural disasters and incidents such as the chemical plant explosion in India. Usually, the military people engaged in this type of action are not in combat, however, if there is political unrest in the area they could be subject to terrorist attack. (5:6-3) The next type of activity begins to take on a military force employment activity.

Noncombatant emergency evacuation is a paradox in itself. This type of action is in response to a request from the State Department to evacuate American Civilians from an area where the situation is rapidly deteriorating. (5:6-4) Although, a direct attack has not been made on United States civilians the potential for an attack is high. Thus, there is a high probability that the United States military forces will encounter at least terrorist activity if not organized guerrilla attack during the evacuation. The forces have to be

ready to fight but can not conduct pre-emptive strikes to secure the area. (5:6-5) The same rules of engagement apply to the next type of activity.

Military presence is one of the most widely used techniques employed by the United States. Since the end of World War II we have deployed forces on more than 200 occasions. (5:6-7) This can include fleet deployments to potential trouble spots in the world, to the actual landing of troops in areas for exercises or temporary assignment. (5:6-7) Operations of this type are done in an attempt to stabilize the political environment and deter further escalation. (5:6-8) Again, like the two previous types of actions the United States forces are subject to terrorist or guerrilla attacks. The next type of action is the same as military presence only the context is different.

Peacemaking or peacekeeping operations are operations where military forces separate forces where both sides have not agreed to the separation (peacemaking) or have agreed to the separation (peacekeeping). (5:7-1) In either case United States puts forces are in direct contact with hostile forces. The potential for conflict is much greater in the peacemaking role but it is also highly probable in a peacekeeping role. (5:6-8,7-2) The major difference between this form of action and the previous action is that the forces are in an

environment of making or keeping a peace after a conflict has already occurred. As with previous actions, the forces are subject to attack. Unlike the previous scenarios where the forces are entering for peaceful reasons the last type of action is purely offensive in nature.

Strike operations cover several different types of specific actions. These include hostage rescue raids, retaliatory strikes, interdiction to pre-empt future actions, and combinations of these. (5:6-9) These are one shot actions to achieve a specific limited objective. (5:6-9) In recent years we have used this technique with success and failure. The rescue of the Mayaguez, and the Libyan raid are examples of successful actions. The Iran hostage rescue and the strike against Syria are examples of failures. I feel that we will be tasked to execute this type of action again in the future. With the types of LIC actions as a backdrop and the potential for conflict as the basis for the potential scenarios that we may face I will now move into a assessment of the potential for LIC by region of the world. I will also address the constraints that may be placed on our possible courses of action.

NOTES

CHAPTER I

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CHAPTER 2
REGIONAL POTENTIALS FOR CONFLICT

This chapter will use the sources of conflict discussed in the previous chapter to assess the potential for LIC in the various regions of the world. Overlaid on this will be the potential constraints that we may face because of domestic and international reactions to our actions.

I divided the world into the following regions:

a. Central America which includes Mexico, and the Caribbean basin.

b. South America which includes Antartica.

c. Africa.

d. Southwest Asia which includes Iran and Iraq.

e. Southeast Asia which includes Malaysia, Indonesia and the Polynesian islands.

I will only discuss the key sources of conflict that have a high potential to cause conflict in the area. This will not be an in-depth analysis, but will only highlight the regions and the general considerations that we may face in the regions.

CENTRAL AMERICA

Central America has five potential sources for conflict. They are cultural instability, economic instability, competition for energy and ocean resources and the arms

transfer. The paramount aspect of all these potentials for conflict is their interrelationships to each other. The cultural conflict is one found in many developing nations, that being the conflict between the haves and the have nots. This results in not only internal problems but also intraregional conflicts. (1:364) A prime example is the Pan-Mayan emergence in southern Mexico, Guatemala, Honduras and Belize. (2:355) Closely aligned with the class problem is the source of the class distinctions.

The primary source is control of the main capital producing capabilities of the country. This includes agriculture and the major capital producing industry in the region, that being oil and natural gas. This ties the conflict for energy and ocean resources together, because many of the oil reserves are offshore. (3:49) The potential exists for the denial of the source to the host country because of guerrilla actions, or control of the source and a potential for these nations to work with OPEC to raise prices as a means to generate revenues to off set the national debts. (1:364) (2:357)

National debt is a prime source of conflict in the region. Most of the nations are debtor nations that use much of their GNP to cover the debt financing. (4:199) (5:236) This serves to further depress the economy of these countries and create increased unrest between the classes, which leads to the final

source of conflict that being arms transfers.

As the various nations perceive or react to an internal or external threat they take action to obtain the necessary arms to protect their national interests. (2:356) The response can be to a threat by the Soviets using Cuba as a proxy, (1:363) or an internal threat such as in El Salvador. In any case this only serves to cause instability in the region. Many of the characteristics of the potential for conflict in Central America are also true for South America.

SOUTH AMERICA

South America has four potential sources for conflict. These are economic problems, control of energy and ocean resources, and arms transfers. The economic problems of the region are very similar to the problems in Central America. The class system in the two regions has two classes, the upper class and the peasants. This is true of most countries except for Argentina and Brazil. These two countries have a small middle class which is attributable to the arms industry. The economic class distinction continues to widen because of the national debt that the countries have and the high debt servicing payments that tax their GNP. This compounds the economic development problem. Over the last six years over five percent of the regions total production and twenty-five

percent of the nations savings have gone to servicing the foreign debt. (6:39) With the exception of Brazil and Argentina most of these nations rely heavily on the export of energy and natural resources to support debt payment.

Competition for energy and scarce material resources are high potentials for conflict in the area. The prime oil exporting nations in the region are shown in Table 4. The table shows that a large portion of the nations are oil producing nations. However, only Venezuela, Ecuador, Brazil and Trinidad and Tobago are major oil exporters. (7:62) Table 5 shows the scarce materials exporting countries in the region. Again the major exporting nations are Chile, Peru, Bolivia, and Brazil. Control of these resources is continually in dispute in the region. For example, Peru and Chile have a continuing border dispute over the mineral rich area. (1:342) Thus, the potential exists for disruption of the flow of these materials. Again as with Central America, the resources are in remote locations and poor internal transportation system make them highly vulnerable to guerrilla attack or control. The tie between resources and ocean control is also true in this region.

Control of the oceans and the resources in them is a key issue in this region. Argentina and Chile have a continuing dispute over control of the Straits of Magellan. (1:342) Bolivia and Chile have a territorial dispute over an area that

Chile took from Bolivia during a previous war. This area now denies Bolivia access to port facilities. (1:342) The issue becomes even more complex over control of the off-shore littorals by the nations in the northern part of the continent. Furthermore,the countries in South America are part of the world community that feel that deep sea-bed mining is a future legacy of the world. (1:343) Argentina and Chile are also involved in the territorial dispute over claim to Antartica and exploitation of the mineral resources of that region. (1:343) Thus there is constant turmoil in the area over resources. This turmoil is the underpinning for the next source of conflict.

Arms transfers in South America have exploded over the last two decades. The major resource exporting nations have increased their arms arsenals faster than the other countries. (1:344) Some of them, Argentina, and Brazil have even begun to manufacture and export weapons. (1:346) Other nations have even sought other sources other than the United States and the Soviets. (1:345) This presents a two fold problem. First, the rapid arming in the region serves to increase tension. Second, the diversity of sources make the problem of controlling or equalizing the balance a very difficult one. (1:344) Thus, the potential for conflict in the region is high. Although the Americas may seen to be in constant turmoil and potentially explosive they are rather passive when compared to Africa.

AFRICA

Africa is three different regions occupying one continent. The northern part has many of the same problems associated with the Middle East. The Horn of Africa again shares many of the Middle East issues but also has issues that are more common to the remaining portion of the continent. To address this region I will first discuss the Horn, then expand to the south and central part and conclude with the north as a lead in to the next region.

The Horn region has all the potential sources for conflict. Active Soviet involvement in the area. Cultural problems that are at the subnational society level. Competition for energy, scarce materials, and ocean resources. There are major economic problems in the area. Finally, a massive arms build up program with multiple sources. With this total spectrum as a back drop I will attempt to highlight the key concerns in each source for conflict.

The cultural problems stem from the basic societal make-up of the area. This region, is comprised of tribes, grouped together in arbitrary geographical boundaries to form countries. Except for Ethiopia the people in the countries do not a true loyalty to a national government. (2:381) Because of this tribal orientation the "normal" national social responsibilities such as health care, education, and many other

are almost impossible to administer. Yet the nation has to function domestically like a nation in the eyes of the world. Forcing a breakdown or integration of a tribal system into nationalistic system only provokes conflict. Thus, the basic source for conflict.

Economic conditions in this area are abysmal. One only has to look at tables 6 through 17 and see that the countries in this region are at or near the bottom in all the economic categories. Also typical of this area is the amount of United States and multinational aid provided to the region. All the countries in this area fall into the category of least developed nations and the average level of aid provided to this category is about $20 per capita. (Table 10) Coupled with the economic disaster is a severe food shortage in the area. Tables 8 and 14 show that the region is not capable of supporting the population. The net result is economic chaos which will continue to exist. Thus, the high potential for future conflict. This economic condition may appear to suggest that competition for scarce resources is not an issue in this area. However, the converse is true.

Unlike the previous regions and the other parts of Africa the Horn does not produce resources but rather needs resources to develop. Thus the conflict for resources is not a denial of access or internal control issue but rather a competition with

the developing and developed nations for resources. This again will cause conflict because of the economic conditions in the area. The countries cannot compete but they need the resources to develop. Therefore, they will feel deprivation and conflict will ensue. The Soviets may use this hostility to gain control of strategic portions of the area.

The soviets have already tried to expand their influence in the Horn. For a short period of time they were successful in swaying the Ethiopians. (1:380) This marriage has since soured and the other countries of the Horn are now wary of foreign presence, even that of the United States. The French have succeeded in maintaining a base at the very tip of the Horn because of carry-over colonial interests. The main reason for the super power interest in this area is a ocean resources control issue. That is to say control of access to the Red Sea and the sea lanes of communication to the Suez Canal. (1:378) It is almost ironic that this area has not taken greater advantage of it's strategic location to extricate economic concessions from the developed nations. The only concessions to date are arms transfers.

Unlike the other regions that I addressed, this region does not need arms to protect its resources but rather to maintain some modicum of control over internal affairs. The Soviets recognize this and exploit it. (2:385) With the

diverse tribal power structure it is easy to see that the opportunity for multiple transfers to multiple groups in the area is a concern. Coupled with the strategic position of the area and poor economic condition, it is obvious that this part of Africa is nothing more than strategic dirt that the developed nations will continue to exploit. The result, is continued open conflict. The central and southern part of Africa have the same issues but the context is significantly different.

Central and southern Africa present a more heterogeneous mix problems. Again if you look at Tables 6 through 17 you see a patch work quilt of economic development, resource sources, and strategic points. This context difference only serves to amplify the potential for conflict.

There are cultural differences in the area. In the more developed countries (see Table 10) there is less tribalism than was present in the Horn. At first glance this may appear to be a positive sign but in reality this only serves to enhance the potential for conflict. I say that because you have the same problems that you have in the more developed countries. (1:369) To further exacerbate the problems you have South Africa with its vast economic wealth and the apartheid government. (1:367) This only fuels the cultural differences and increase tension. In the more developed nations the

problems of urbanization, unemployment and other social distinguishing features enhance the possibility for conflict. (2:383) In the lesser developed nations the cultural problems are even more complex.

Five main cultural premises form the structure of the lesser developed nations. These are one-party states, charismatic leaders, military regimes, tribalism, and border conflict for access to water. Tanzania is a classic example of a totalitarian one party state. (2:377) A whole cast of charismatic leaders abound in various countries in the region. (2:378) Military regimes are usually tied to these leaders and exercise strict control over the country. (2:379) Again tribalism and corruption within the tribal structure abound. (2:381) Finally, border disputes arise over tribal movements to water and the artificial boundaries that exist in the area. (2:384) As with the Horn the cultural underpinnings of conflict over flow into other sources of conflict.

Economic conditions in the area are as mixed as the cultural issues. A review of the key economic indicators shown in Tables 13,15,16, and 17, show that the area is a potpourri of economic situations. The key aspects that contribute to the potential for conflict, in order of importance, are GNP growth rate, reliance on economic aid, industrial development, and exports. Another indicator of the long term outlook is the literacy rate in the region, (see Table 18) which shows that

the economic problems of the area will last for a long time. The major aspect affecting the economic health of the countries is their resource posture.

As with Central and South America the countries that have scarce materials and energy resources have the stronger economic and political structures. Unlike the afore stated regions, the scarce materials issue is more prominent in this area than in any other region of the world. Table 19 shows that the entire western world is dependent on this area for most of the key materials. Another key resource issue is the availability of food in the region. In this category again it is a mixed bag. (see Table 8) Population density of the countries, when compared to food production again shows a the disconnect. (see Table 20) Food production is a deviation from previous discussions of resources but in Africa it is an important part of the resource picture. Finally, energy resources play a major role in the area. (Table 6) Once again the same aspects that effect the availability, and access to the energy and material resources apply to this region. Guerrilla, and terrorist attacks could impair the entire Western economic structure if they occurred. Again, closely aligned with the on land resource issue is the ocean resource potential for conflict.

Ocean resource conflict in this area covers the entire

spectrum. It includes off-shore resource rights, disputes over the littorals, sea lines of communication (SLOC), and Antartica issues. The major conflicts over the first two issues center on the former Ivory Coast region down to Angola. They involve the littoral scope of the twelve mile limit, which includes navigation, fishing, oil, and mineral rights. (2:384) Closely aligned with the navigation issue is the control of the Cape of Good Hope. (the tip of South Africa) This is an important SLOC because a large portion of the world's outsized shipping to the Americas traverses this passage. Finally, many of the countries in this area support the philosophy of the legacy of nations idea for exploitation of the deep sea-bed mining of resources and Antartica development. (2:385) This potential for conflict adds increased impetus to the nations that are the more developed, and the insecure nations to increase their expenditures on military hardware.

Once again the "have nations" are arming to protect themselves from the "have not nations." One of the prime examples of this is South Africa. They are arming to defend themselves from attack from their neighbors. The neighboring countries are also arming to rid South Africa of apartheid rule. Both sides are receiving arms from varied sources. South Africa from "where ever they can get them" and the other countries through arms shipments from the Soviet Union through Cuba and Angola. (1:368) Again as with the Horn the nations of

the world are letting the area fight it out for control of the area and then in the end will see who they support based on who is winning. (2:380) As with the Horn this is complicated by the fact that the various regimes in the area are tribal factions, held together by military control. (2:379) Another aspect that complicates the equation, is that some feel that South Africa has the capability to produce nuclear weapons. This is particularly alarming because of the underdeveloped character of the area and the tremendous destabilizing effect that this could have. Of even greater consequence for the area is the prospect that South Africa's neighbors could mount an offensive and seize control of a nuclear device and hold the entire region hostage. This is a somber thought but when put into context with all the other potentials for conflict it is the least likely. However, the bottom line is that we can expect to see continued conflict in the area and can rest assured that it will not diminish in the future. The same is true for the final segment of Africa, that is the Sahara region.

This part of Africa exhibits many of the same trends that the other two parts had, but it is more like the Middle East. The Sahara states have cultural, economic, energy, scarce materials, ocean resource, arms transfers, and Soviet threat sources for conflict. The form of the conflict is significantly different from the rest of Africa. The specifics

of the differences are primarily due to the Muslim character of the area. Therefore, I will not discuss the specifics of this part of Africa but rather include them in the discussion of the Southwest Asia.

SOUTHWEST ASIA

The Southwest Asia has the full spectrum of sources for conflict. As with the other regions the Southwest Asia has cultural differences at the heart of the potentials for conflict. The major difference is that the differences are also religious. This is true of the Arab-Israeli dispute (2:249), splits between religious sects within Lebanon, and finally disputes between the various sects within the Muslim religion. The first two splits are current examples of the continuous conflict in the region. The Muslim split only surfaced as a result of the takeover in Iran. This split has a unifying and destabilizing effect. I say that because the Shei want to unify the entire arab world and dissolve the boundaries between the current nation states. (2:245) Thus the unifying effect. However, the nations in the region do not all agree with this idea and thus the destabilizing effect. This also causes challenges to the current form of government.

The current political structure in many countries in the region is one of Sheikdoms. Challenges to this order exist from Morocco to Saudia Arabia. (1:263) The challenge comes

from two perspectives. First, by those who want additional social reform and (1:233) second, from the religious unification zealots. The cultural differences are fueled by the economic challenges of the area.

A quick view of Table 10 shows that all the countries in the region fall into the developing nation category. A glance at Table 13 shows that only half of the nations enjoy the benefit from having energy dollars to use in developing. A review of Tables 15 to 18 show that the countries are making progress but that some of them are heavily dependent on bilateral aid to sustain the growth. A more long-term indicator of the future economic growth of the region is the literacy rate. Table 18 shows that the whole region is in the lower level. Thus the long-term outlook is not bright. The rapid move towards economic development has strained the economies of many of the countries and put additional stress on the underlying cultural problems. These pressures encourage the Soviets to take the initiative, to enhance their position in the region.

The Soviets stepped up their arms transfers to many countries in the region. These include arms sales to Syria, Iraq, Iran, and even pending sales to Saudia Arabia. (2:275) They have also made inroads into Yemen and are supporting various proxy groups such as the PLO. (2:247) With the

diplomatic successes of Premier Gorbachev they are also stepping up their propaganda, and psychological operations. (1:237) Control of the resources of the region is the prime objective of the Soviet actions.

Resource issues are the major potential for conflict in the area. The Middle East does have some mineral deposits but the real issues are control of oil and natural gas fields and the transportation of the these resources to the Western nations. Once again control is both an internal and external problem. Terrorist groups or other nations may attempt to control the source. The sources are highly vulnerable to attack as we saw in the Persian Gulf. The pipelines, ports and other fixed transportation assets are also highly vulnerable because of their isolation and complexity. The movable transportation systems are also venerable. Again this was born out in the Persian Gulf. This is the final resource issue in the region. Control of the SLOCs The three main points of concern are the Suez Canal, the Horn of Africa leading into the Red Sea, and Persian Gulf. Control of the SLOCs by hostile groups would result in armed conflict. Since these passages are easy to control this is a high potential for conflict. Outside control of the regions resources threaten the major producing nations. Therefore, they are constantly buying new weapons to defend their interests.

This region is the largest market for arms sales in the

world. Every arms producing nation markets their weapons in the region. (2:279) An additional problem is that Israel not only receives arms from the United States but also manufactures and sells weapons in the international market. (1:477) This level of arms transfer and the inability of any nation to control the sale of arms in the region presents a major destabilizing influence in the region. The economic conditions, intensify the growing imbalance because of the nations capabilities to obtain and operate weapons systems. Thus, the major potential for conflict is one of large arms transfers and imbalance between countries. This issue is exacerbated by the potential for the introduction of nuclear weapons.

The potential for nuclear weapons proliferation in the region is very high. I say this for two reasons. First, Israel and Iraq have already shown the capability to build nuclear reactors. Referring back to chapter two, it is altogether possible that both countries also have the technology to build a nuclear weapon. (1:495) Second, if either of these countries develop the capability, it will set off a round of escalation by the other countries in the region to buy nuclear weapons. Thus, the potential for nuclear proliferation is present. This development may not seem likely now but the same was true of chemical weapons ten years ago.

Chemical weapons are a current concern in the region. The use by Iraq and Iran is the first step to development and use of these weapons. Lybia's recently disclosed capability to manufacture chemical weapons will only fuel the fire. (2:495) The potential does exist for more escalation, only time will tell the magnitude of the problem.

The Southwest Asia is probably the most accepted region for continued conflict. Many feel that this is the region that we have the highest potential for LIC activities. Based on the past this may be true. However, a quieter region of the world may be the area with the highest potential for conflict. That is the Southeast Asian region.

SOUTHEAST ASIA

I will break the Southeast Asian region into two parts. One segment contains India, Pakistan, and the adjacent countries. The other part is the classical Southeast Asia including the Association of Southeast Asian Nations (ASEAN). I make this division because the current and future situations in these ares are slightly different. As with the Northern African nations the Indian and Pakistani region is a bridge. Many of the Middle East problems are prevalent in this region.

The India-Pakistan area has four potential sources for conflict. These are cultural, economic, arms transfers, and

nuclear proliferation. The most prevalent underlying cause for conflict is the cultural aspect. This region from the early pre-independence days had cultural problems. Tribal areas based on both social and religious features comprise the region. The British divided India into two parts before independence. The separation was based on religious beliefs and a vote by the tribal heads. The result was India and Pakistan. The primary religious sects were Hindu (India), and Muslim (Pakistan). This however was not a clear division and portions of India were Muslim. Thus, religion became and still is a major dividing issue in the area. As with the Middle East, religious conflict is fueled by economic developments that have led to demands for social change.

Demands for social change caused three changes to the culture of this area. First, it resulted in the dilution of the tribal powers in the nations. Second, it resulted in the tempering of religious beliefs in the area. Finally, it has started a movement towards changing the total social order of the nations. This massive social revolution caused an undercurrent of unrest for the countries. This then presents a continuing potential for conflict. The cultural change is driven by the economic change and the converse is also true.

Economic growth in the region has led to major problems. Many of the countries have large international debt. The economies have suffered because of bad development planning.

The rapidly changing economic climate in the world made it difficult for the countries to follow any type of a systematic market development and expansion program. As Table 18 shows the population in this region is largely illiterate, so the current economic problems will probably continue to perpetuate themselves. Finally, the population growth in this region adds a massive burden to any development effort. This is true for even the most basic needs such as food, shelter, etc. The economic turmoil fueled by cultural differences is almost a sure indicator that conflict in this area will continue.

With the high potential for conflict, it is not surprising that the nations are engaged in a large arms build-up. This market pits East against West and changes faster than the stock market. Both India and Pakistan have Soviet and United States weaponry. This is an interesting paradox that we are supplying arch rivals. Other nations are also in this market and seeking to exploit the region. One bright note is that the two major powers in the region are almost at parity so at least there is some balance. This balance could be upset with the introduction of nuclear weapons.

Both of the major powers could build nuclear weapons. Both have denied that they have developed a nuclear capability. To date this diplomatic bantering has not shown that either power has nuclear weapons, but the potential exists. Thus,

although this portion of Southeast Asia is in a state of equilibrium now it does not mean that it will be in the future. The same is true for the other part of the region, that being the traditional part.

Southeast Asia has four sources for potential conflict. These are Political instability, competition for ocean resources, arms transfers, and nuclear weapons proliferation. There is always a certain amount of political instability in this region, but it is isolated and short lived. There are two countries in the region where this is not true. The Philippines, and Indonesia have continuing political unrest. (2:298) This has erupted in open conflict, and unless the governments can control the situation it could escalate. Thus, the climate exists for continued future conflict. This presents a problem for the region and the world.

All the east west sea lanes traverse this region, thus the conflict for ocean resources. This region is one of the key SLOCs in the world. Interrupting shipping in this area would result in international economic chaos. (1:422) Therefore, political unrest that threatens to disrupt the flow of assets through the region causes major concern. This is not only true in the world community but also in the region itself.

This concern has lead to a massive arms build-up in the region. The various countries have armed to protect their own

interests. Most of the countries have rapidly developing strong economies and they want to ensure that they can continue to develop. Again as with the Middle East every suppler in the world wants a share of this market. Probably the most alarming issue is the rapidly developing arms industry within the region. Two countries, Singapore, and Taiwan, have developed large arms manufacturing and export businesses. (1:477) Thus, the destabilizing effects of the control of arms introduction and the balance of the countries capabilities are disproportionate in this region. The potential for conflict remains high and shows signs that it may escalate to new levels.

The rapidly expanding technological base of this region, make the future introduction of nuclear weapons in this area possible. There are indications that Taiwan may have already started work in this area. (2:331) True, ASEAN is calling for a nuclear-free zone in the area but if a nation in the region obtains the capability this may change the climate. Although the entire climate in the region is quiet now this may not be true in the future. The potential exists and the consequences are high, thus the concern.

This chapter highlighted the potential sources for conflict in various regions of the world where we do not have a large standing force available to respond to the crisis. Probably the most striking feature of this chapter is that

conflict could and in all likelihood breakout in all these regions. The key concerns are, will we be able to respond? What will limit our actions? What part will domestic and world opinion play? This is the setting for the next chapter.

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CHAPTER 3
ASSESSMENT OF REGIONAL CONFLICTS

This chapter will address the United States' ability to respond to levels of LIC in various regions of the world. The basis for the analysis will be the types of conflict that we may face (see Chapter 1) constrained by domestic and international impediments. I will discuss the various types of domestic and international constraints that we may face. Then I will assess the potential type of conflict that we will face in each region. Finally I will assess our capability to handle these types of conflicts.

The main constraint that the United States faces with over intervening in a region, is the legitimacy of our actions. This is true both from a domestic and international perspective. (1:8) (2:53) If we cannot convince the world that we are responding to an act of aggression we will have a difficult time committing our forces. If we succeed in convincing the international community of the legitimacy of the intervention we must meet two tests before our actions are condoned. First, the country that we are entering must ask us to intervene. (2:65) The second is that we need to be careful that we do not create the impression that we are using undue force, or creating the "David and Goliath scenario." (2:54) This is not to say that we should continue to follow our past approach of incremental force employment. (3:10) Once we

establish the legitimacy of our actions we need to be careful on how we prosecute the action.

Formulation of our approach to the conflict is the one area where we have failed because we did not assess the domestic and international reactions. The United States and the Air Force greatest failure is in putting together a consolidated policy that includes political, economic, and military solutions to the conflict. (1:7) Next the United States must translate this policy into clear goals and objectives. (4:163) Finally, we must obtain public support for the action. (1:7) This approach seems simple but in reality it is difficult for three reasons. First, many operations are covert and not releasable, thus, the nation and the military can't always get public support before the operation. (5:1013) Second, the decision making process in the bureaucracy often times becomes an impediment to the formulation of coherent policy. (4:162) Finally, the perceived impact of intervention on the United States and its long-term role in this type of action are not always understood. (4:160) Even if the national leadership develops a credible approach and sell it to the public the military is not relieved from other possible constraints.

The execution of the actual action also constrains the military services effectiveness. The public perception of the

threat could change and hamper United States forces ability to execute the mission. (2:56) A classic example of this was the breakdown of the American consensus over the success of the military during the Tet Offensive of 1968. This ultimately lead President Johnson to a decision not run for a second term. (4:161) The armed forces will be fighting in an alien culture that does not adhere to Judeo-Christian ethics that the United States cherish. This constrains our ability to act, but the enemy is not constrained. (6:11) The military must resist the temptation to "Americanize" the conflict or we may alienate the people that we are fighting for and push them to the opposition. (6:12) If we alienate the indigenous population some of the support from our allies may be withdrawn. (1:9) Finally, we must see a protracted conflict through to its conclusion. This is probably the major execution constraint because the American people want short wars. (6:11) With the constraints in mind I will now move into an assessment of the potential types of conflict that the military may faces in each region.

CENTRAL AMERICA

United States national security will continue to drive the nation to support insurgencies and counterinsurgencies in this region. In the event that hostilities subside in the region and a peacekeeping or peacemaking mission is possible the United States is invited to be a part of this force we will

respond. I share Mr. Richard Millet's opinion that a continued low level of United States military force involvement in the region is necessary unless additional foreign military forces intervention becomes obvious. If that happens we may move to some form of show of force, advisors and even outright support to the countries in question. If the need dictates we must move larger forces into the region. (7:411)

SOUTH AMERICA

As with Central America the United States will have to continue to support the region as we have in the past. One exception to this may be a greater level of intervention if major border disputes start. Then United States may to commit military forces to the region. The real concern is that the United States may have to move larger groups of forces into the area. (8:41)

AFRICA

This area has the highest potential for increased United States involvement in LIC military operations. There are two premises that support this statement. First, the active conflicts in the area are sure to escalate. The areas with the highest probability for the escalation are the Horn and the South African portions of the region. (9:21) Both of these areas are key to US national security and could force us into military conflict in the region. The United States military

may also be incrementally committed to support other insurgencies and counterinsurgencies that are in our national interests. Our main reasons for supporting these conflicts are the strategic material reserves, sea lanes of communication, and our role of encouraging developing nations to grow economically. (10:4) Finally, with Lybia's development of a chemical warfare capability, we will have to enhance up our terrorism counteraction campaign in the region. (11:4) This will require increased force commitments by the United States.

SOUTHWEST ASIA

The United States policy of supporting the status quo in this region will continue. We will maintain the US naval presence in the area to ensure continued oil passage from the producing countries to the consumer nations. However, two exceptions may drive us from our current low level involvement. We may have to intervene if the Soviets make additional inroads into the region and attempt to control the flow or price of oil. (12:52) The other factor that could force the United States to commit military forces to the region is if the Palestine issue threatens to cause major unrest in the area. (13:127) In either case it would take a major change in the status quo before we would commit military forces to the region.

SOUTHEAST ASIA

As with Southwest Asia, the United States will try to maintain the status quo. However, if any of the potentials for conflict discussed in Chapter 2 materialize, we would respond with military forces to counter the threat. This is due to the strategic importance (sea lanes of communication) of this region which prohibits an incremental response. Conflict in this region would force the United States to rapidly move large specialized military forces into the region. (14:62) This would be true for both insurgency and counterinsurgency types of activities.

If we have to engage in the four types of conflict at all levels, in all the regions, the question then becomes "how well are we prepared to respond to this threat?" Many people outside of the military structure and within the military feel that we are not prepared to handle the complete LIC spectrum. Let me give some examples to support this assertion.

Dr. Sam Sarkesian said that the military was too preoccupied with a NATO or Persian Gulf type of scenario and was not devoting enough attention to LIC. (2:9) Congress recognized our inability to respond to the various levels of LIC and directed the formulation of a Special Operations Command (SOC) to address this shortfall. (16:136) Internal military organizations also identified our inability to execute

the complete spectrum of LIC operations. The Joint Low-Intensity Conflict Project Team highlighted the need to improve the military's ability to respond to various LIC scenarios. (15:15-6) The next question is obvious, "what are the military services doing to fill the void?"

All of the services are trying to fill the void. The Marine Corps and the Navy are enhancing their capability by establishing the Marine Amphibious Unit (Special Operations Capable). (15:9-6) The Air Force Continues to upgraded their aircraft and training, and the same can be said for the Army. (15:9-11) The key issue then becomes what the Air Force need to do to fill the void in its capability to respond to all of the levels of conflict? I will not attempt to address all of the shortfalls but rather I will limit my discussion to the higher end of the LIC spectrum. This is small tactical air forces force deployment. My basis for limiting myself to this part of the spectrum is based on a recommendation from the Joint Low-Intensity Conflict Project Team, that we need to develop a capability to small unit operations. (15:9-5) I will also address this area because it has the highest probability for fast implementation because it only involves the restructuring of existing force structure.

The next chapter will focus on the need for the new force structure, the advantages and limitations of the new structure, and finally a proposal to eliminate the disadvantages of the

proposed force structure.

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CHAPTER 4
COMPOSITE WING CONCEPT

This chapter will outline the basis for a new force structure to fill our gap in larger response actions. I will discuss four different aspects of this new structure. These are; the basis for this idea, the proposed aircraft composition for the organization, logistics support approach to support the mission, and finally future actions to further enhance this force structure. The proposed approach will give us the capability to address the problems discussed in chapter 3.

The current force structure problems of our conventional forces is widely recognized. Former Secretary of Defense, Harold Brown, made a general statement about our overall force structure requirements when he said, "They must therefore be planned, designed and assembled with enough flexibility to accommodate possible future changes and dangerous contingencies that could generate...." (1:272) The need for conventional forces that were capable of performing in LIC environments was highlighted by former Ambassador Robert W. Komer when he stated that "A modest fraction (say 5 to 10 percent) of U. S. general-purpose forces be configured and trained to fight in low-intensity conflicts...." (2:21) The Chief of Staff of the Air Force, General Gabriel, further amplified this point when he stated, "...the utility of our conventional forces and is limited by force structure, training emphasis, and planning focus." (3:13) He went on to say that we need to review the

current conventional forces capabilities and see if we can get more LIC utility out of our existing resources. (3:14)

The net result was to form the Center for Low Intensity Conflict (CLIC) to Study the problem. A CLIC report, "Planning Considerations for the Combat Employment of Air Power in Peacetime Contingency Operations," recommended the formation of a "mixed units" force structure to address the LIC issues. (4:19) This is not a new concept, but the size of the force structure is new. Let me digress for a moment and explain that statement.

In 1943 General Kenney created the first mixed or as I call it composite unit. (5:358) The concept remained dormant until 1954 when the Tactical Air Command (TAC) developed the Composite Air Strike Force (CASF). (6:32) This concept was developed because of a recognized deficiency in our capability to prosecute any type of conventional war. (7:326) The CASF was contained fighters, light bombers, reconnaissance aircraft, tankers, and airlift aircraft. (6:32) CASF was a highly mobile quick response force capable of deterring small wars. (8:4) This concept is still in affect today in the tactical air forces. One may then ask, why is it no longer responsive to the LIC types of conflict? The main reason is that the CASF was not put together as a standing unit but rather it was ad hoced from units with various types of aircraft. That is to

say a squadron from each of the units described above were put together to make up the CASF. Thus, the shortcomings described by General Gabriel exist today. The CLIC report that was mentioned earlier in this chapter supports this assertion, and goes on to say that a new composite unit structure would enhance our capability. (4:20) The report also highlighted the advantages and disadvantages of this force structure.

The report highlighted two advantages and one disadvantage. The positive aspects included integrated training and better team work, and a unit that was able to cover multiple missions because they had more than one type of aircraft. The disadvantage was the the logistics capability to support more than one type of aircraft in a unit. (4:19) Let me address the advantages first.

A composite unit has two advantages. They are continuous integrated force package training, and a unit that can accomplish multiple missions because of the multiple types of aircraft assigned to the unit. These benefits address all of the shortfalls that the Chief of Staff highlighted in his report. A review of each of the advantages will verify this fact.

The very formation of the unit gives the USAF a new force structure for conventional forces. Once formed, the unit's day

to day activities resolve the other two issues of training emphasis and planning focus. These two are closely knit and compliment each other.

Let me explain this by discussing the routine operational training enhancements provided by the composite unit structures. A composite unit will not have to depend on large scale exercises of Operational Readiness Inspections (ORI) to practice force package tactics. The unit can practice the tactics everyday, because except for specialized aircraft such as EF-111s, F-4Gs, and tankers, the unit will be self sufficient. This will have two distinct benefits. First, crews will gain valuable experience in coordinating tactics and learning the capabilities and limitations of the various weapon systems and individual crew members. Second, forming force packages from a single base eliminates time consuming and costly activities such as forming up the strike package to proceed to the target. Thus, the training will be cheaper and easier to coordinate. This enhanced training focus will also enhance the planning focus.

Planning focus will be enhanced for two reasons. First, the major planning activities such as mission planning, strike package composition, package rendezvous, and many other planning functions will be under the control of a single organization. Thus, the frag order will only have to go to the

composite unit and the specialized support units instead of all the various strike package units. Second, strike package units can be put on alert to fly target of opportunity missions without having to coordinate between multiple units. This will reduce limiting features such as security concerns, timing, and mission generation time. This results in a more responsive capability for the air force. One may then ask, why don't we already have this type of force structure?

The answer to this question is the main perceived disadvantage to the composite unit structure. The CLIC study identified the logistic communities inability to support this organizational structure as the prime reason for lack of viability of this concept. (4:19) Logistics support constraints are a mind set problem not a resource problem. (9) Let me amplify on the mind set aspect by digressing into a discussion of the current Air Force unit support approach.

The basic organizational unit of the Air Force is the squadron. All the logistics support requirements are built up by squadron. Thus, the manpower, equipment, spare parts, etc. are in squadron sets. A wing is nothing more than three or four squadron sets of resources that are put together at a single base. There are a few exceptions to this packaging statement. These are primarily the high dollar value support equipment, and the low usage high dollar value spare parts. Examples of support equipment items include, large Avionics

Intermediate Stations (AIS) (used to check out and repair avionics Line Replaceable Units (LRU) and Shop Replaceable Units (SRU)), and engine test stands. Low usage high dollar value spare parts include wings, radomes, canopies, etc. The support package for these items are usually allocated by wing. With this background in mind let me discuss the mind set versus the resource basis for logistics being an impediment to carrying out the composite unit concept.

New logistics operational support concepts for a composite unit would eliminate the logistics constraints associated with the approach. The main issue is the organizational level of the composite unit. If the Air Force tried to construct composite squadrons the logistics considerations would not be a mind set but rather a real resource constraining issue. This is true because, equipping a composite squadron would require a complete set of squadron assets for each type of aircraft in the squadron. This would be cost prohibitive. If however, we formed a composite wing the additional costs would be minimal when compared with the enhanced capability. The basis for this statement is the premise squadron sets are the current basic Air Force equipage base. Therefore, if squadron sets were taken from multiple wings to form composite wings it would not require major additions of equipment or material. Let me expand on this point.

At the wing level the assets to support a squadron would

not change on a day to day basis because we would only be supporting a repackaged squadron of a given type of aircraft. The only cost delta may be in the wing level assets and this would only be a one time cost. Before entering into the the structure of the wing itself let me digress and discuss an issue that further amplifies the need for a composite wing. The issue is our ability to deploy and employ our current forces into third world LIC scenarios.

The Air Force basic unit for deployment are squadron level packages. At first glance the deployment of 14 to 24 aircraft does not seen to be a bad approach. The problem becomes more complex when it is viewed as a force package. Since most squadrons are homogeneous (all F-15s, F-16s, EF-111s, etc.) you have unit integrity that helps the unit mold into a single highly capable combat organization. Most force packages are made up of dissimilar types of aircraft. Thus a package may contain 4 to 6 F-15s, 4 to 6 F-16s, 2 to 4 F-4g, and even other aircraft. Including other support aircraft such as tankers, airlift, and observation assets you are looking at deploying four to six squadrons, or 56 to 108 aircraft. Again, on the surface this does not seem to be a real issue until you begin to look at airfield availability in the various regions of the world. Table 21 summarizes by region the number of airfields that have at lease 10,000 feet of runway and adequate apron space to park at least a wing of aircraft. The problem is

further complicated when you look at the internal transportation system of many of the countries in the various regions. When this is added to the equation one can not help but conclude that most of the internal movement of men and material will have to be by air. Therefore, the Air Force will have to share the airfield with the Army and Navy who will need to airlift support to their personnel in the field. (10:44) Tables 22 to 25 contain select examples of the potential magnitude of the problem. Each table shows an airfield layout of the best air field in the country and a country map which shows the limited transportation. The Southwest Asian region was not included because adequate facilities exist to support operations in that region. Because of the lack of airfields and internal infrastructure, it then becomes obvious that the Air Force needs to develop a new force structure to accommodate the real potentials for conflict.

The operational solution necessitates the formation of composite wings. This is not to say that all the Air Force wings should be composite wings, only the level that is necessary to cover the contingencies that are at the higher end of the LIC spectrum. The proposed composition of the wings is shown in Table 26. This is a transposed Air Force equivalent of the force structure for a Marine Amphibious Brigade (MAB). (11:M-14) I chose this structure because this is the type of capability that we need to support the Army at the higher end

of the LIC spectrum short of larger conventional force engagements (Army Corps). With the organizational structure in mind let me now discuss the logistics operational support concept.

The composite wing logistics operational support concept is slightly different from the normal wing concept. The day to day operations concept is the same with a few exceptions. The wing operates using a base's normal maintenance shops, however, maintenance personnel have enhanced skill levels. The enhanced skill levels are dictated by the many different types of aircraft in the wing and the need for maintenance technicians to be proficient on the equipment in all of the various aircraft. I would develop the needed skills by using the Rivet Workforce program for Air Force Speciality Code (AFSC) compression. (12:14) The Rivet Workforce Program takes maintenance technicians and qualifies them in other maintenance AFSCs. My approach to this program would be to have them qualified in the same AFSC but on multiple types of aircraft. Initially I would overman the maintenance shops. The specialists in each type of aircraft would then begin an on-the-job training program to learn the various aircraft systems that they were not familiar with. As the technicians became qualified the size of the shops would go down to the authorized manning levels. As new technicians came into the unit they would begin the upgrade program. Thus, all the people would

begin as specialists on one system and learn the other systems. (13:13-2) Organizationally the maintenance units structure will not change. The major difference in composite wing approach is how the squadron or wing deploys.

Deployment of a composite squadron would be different from the current deployment concepts. The squadrons would deploy with a composite War Reserve Material (WRM) package. The large AISs for the various aircraft would not deploy unless the entire wing deployed. The WRM kits would contain enhanced spares so that the unit could function for 30 days without having an intermediate support capability. The Critical Item List Decision Support System (CILDSS) would be used to determine the contents of the WRM kits. (see table 27) (11:9) The maintenance would be a remove and replace action and evacuate the reparable back to the home station for repair. (12:14) Reparables would be evacuated on a weekly basis so that replenishment could begin after 30 days. Deploying a composite wing would require modification to the squadron concept.

The deployment would require additive support elements with a squadron level deployment. This is true for two reasons. First, deploying the entire wing would not allow for an enhanced WRM package as was the case with a squadron deployment. The same is true today because most squadrons,

draw down the wing assets to deploy. Therefore, even the wing organizational structure that we have today does not have the capability to support extended deployments without additive support. Second, it would not be practical to deploy the whole wing and leave the entire intermediate level maintenance support structure at the home base. Leaving the intermediate capability at the main base we would further draw down on the limited spares of the unit because of the increased pipeline time to turn reparables. Therefore the wing deployment support package would include the AIS stations, portable engine test stands, etc. One may then ask, why should we consider this concept if at the wing level the deployment support concept is no different than for the current force structure? The answer is that logistics is not the main constraint as was stated in the CLIC study.

To further amplify the fact that logistics is not the limiting factor to forming composite wings let us look at the opposite of forming a new organization, that being dividing a wing up into self sufficient squadrons. This is what we do when we deactivate a regular Air Force wing and move it into the Air National Guard (ANG) or the Air Force Reserve (AFRes). When a wing is broken down and transferred to the ANG or AFRes no additional spares or support equipment are bought to support the squadrons. Thus, with AFSC compression and redistribution

of spares the composite wings could be made from existing force structure within existing resource limits. There are however, things that could be done to new weapon systems to make this idea even more feasible.

Enhanced supportability of the new weapon systems will make this concept even more viable. These include onboard equipment that traditionally were separate pieces of support equipment. An example of this is the onboard oxygen, inert gas system that will be on the Advanced Tactical Fighter (ATF). This eliminates the need for support equipment and gas generation plants. Another initiative that reduces the need for multiple kinds of support equipment is the avionics test equipment standardization program. (13:14) This program is designed to develop a standard set of test equipment that can be used on multiple systems by only changing software programs. When coupled with onboard advanced fault detection and isolation systems the complexity and size of the test equipment will be reduced significantly. (13:13) Finally, major improvements in system reliability and maintainability would reduce the number of system failures. This would enhance the viability of the composite wing. Let me expand on this point because it is not only the key to future composite wings but also all of the Air Force's weapon systems.

Reliability and maintainability are the underpinnings of

operational capability. Let me explain this statement. In the 1950s the typical Air Force fighter aircraft could surge to generate one sortie per day. (14:6) The force was then comprised of F-100s, F-105s, F-101s and other century series aircraft. In the 1960s the Air Force had these aircraft and the new F-4, F-111s, and the A-7. These aircraft could surge to produce 1.5 to 2.5 sorties per day if sufficient spare parts were available. (14:9) In the 1970s the Air Force introduced the F-15s, F-16s, and the A-10s. These aircraft have the capability to produce significantly higher sortie rates than their predecessors. Why can they do this? The answer is simple they do not break as often and when they do it does not take as long to fix them. Let me be more specific by doing a comparative analysis between the aircraft of the 1960s and the current fighter and attack aircraft.

Table 28 is a comparative analysis of the key operations and support cost factors of the two generations of weapon systems. The comparison of the A-7 to the A-10 shows an across the board reduction. This is due to the fact that the A-10 does not break as often i.e. higher reliability and that it is easier to repair lower maintenance hours per maintenance task.

The F-4 and F-111 comparison to the F-15 and F-16 are not as clear in all cases. At the base level both the F-15 and F-15 do not fail as often and are easier to repair. The main reason for the high depot maintenance hours per flying hour

rates for the F-15 and F-16 is the high level of upgrades that are being placed on the aircraft versus the F-4. The reason for the reduced F-4 replenishment spares costs is that the early model F-4s are being phased out of the Air Force and therefore they are being reclaimed by the Aircraft Maintenance and Reconstitution Center (AMARC) and the parts are used to support active force therefore we are not forced to procure new parts. Finally, support equipment costs are inordinately high for the F-15 because of the new generation of electronics that we introduced initially in the F-15. Even with these considerations the newer systems are easier to support and thus have increased combat capability. As the Commander of the Air Force Logistics Command, General Hansen, has said on numerous occasions our goal should be to produce an unbreakable aircraft, that being impossible we should try to enhance reliability and reduce maintenance actions. Why is this important to the composite wing and conventional wing concepts? It is obvious. If we reduce the number of failures on a weapon system we do not need as many spare parts, people to repair the systems, and support equipment to determine what is wrong with the systems. The ultimate example of this would be to have an aircraft that was flown by a pilot and had "A" maintenance person to gas, load munitions and wave good bye to the pilot.

The net result of the various new weapon system support initiatives and a realistic resource assessments is that the

composite wing could become a new capability for the Air Force. The main constraint is mind set not resources.

NOTES

CHAPTER IV

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9. The author has held many key logistics support concept development positions. Most recently he was the System Program Manager for the Peacekeeper and the Small Intercontinental Ballistic Missile programs. He developed, and implemented the logistics support concepts for these programs. During this assignment he encountered some of the same mind set problems.

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13. Joint Low-Intensity Conflict Project Final Report, Volume I Analytical Review of Low-Intensity Conflict, United States Army Training and Doctrine Command, Fort Monroe, Virginia, 1 August, 1986.

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CONCLUSION

The ever present LIC threat and that the United States is not able to handle the larger conflicts short of conventional warfare make it imperative that we re-examine our current force structure. We need to step up to the issue that we cannot send wings of aircraft to any part of the world to counter a LIC threat. We need to form at least two composite wings and begin the training and equipping to prepare for the larger LIC scenarios. If we do not we may find ourselves unable to act. A fact that the United States cannot accept.

TABLE 1

COUNTER TERRORISM ——— LOW INTENSITY ——— MID INTENSITY ——— HIGH INTENSITY

Noncombat Force Employment	One-Time Operations	Advisory Assistance	Cadre for Host Forces	Combat Units with Host Forces	Unilateral Inter-vention	Limited Conventional War	Unlimited Conventional War	Nuclear War
-Joint exercise -Show of force -Increased alert -Peace keeping -Combat support -Intel-ligence -Logistics -foreign military sales	-Son Tay-type raids	-Short term military training teams -No combat -Expedited foreign military sales	-Longer term teams in field	-Battalion/ squadron size units -Special Operations Force units	-Carrier battle group -Special-ized joint units -Short term specific goal established	-Full Rapid Deploy-ment Joint Task Force employ-ment		

SOURCE: Dean, David J., LtCol, USAF, The Air Force in Low Intensity Conflicts, Maxwell AFB, Al., Air University Press, 1986, P. 6.

TABLE 2

STRATEGIES OF A POLITICAL IDEOLOGICAL INSURGENCY

POLITICAL ELEMENT

TACTIC	GOAL
Front organizations Cover organizations International relations Selective terror Psychological operations Shadow government	To win support and credibility as alternative to government

MILITARY ELEMENT

Selective terror Subversion Sabotage Ambushes Guerrilla warfare Psychological operations	To harass and undermine government; to demonstrate its failure

Figure 4-1

SOURCE: Final Report of the Joint Low-Intensity Conflict Project, Volume I, Analytical Review of Low-Intenstity Conflict, United States Army Training and Doctrine Command, Ft. Monroe, Va., 1 August 1986, P. 1-6.

TABLE 3

PROTOTYPICAL PHASES OF A POLITICAL/IDEOLOGICAL INSURGENCY

PHASE I. ORGANIZATION
- Organize, educate, proselytize
- Infiltrate other organizations
- Form party

PHASE II. PROBATION
- Infiltrate government and other organizations
- Create local cells, expand national cells, train groups
- Conduct political activity more openly:
  - Labor organization
  - Front groups/political organization
  - Strikes

PHASE III. INITIATION
- Initiate low-level violence:
  - Sabotage
  - Terrorism
- Conduct propaganda, conduct psychological operations
- Politically mobilize masses
- Seek international support
- Create base areas/low-level guerrilla action

PHASE IV. INSURRECTION
- Establish/expand base areas
- Expand guerrilla attacks
- Proclaim countergovernment

PHASE V. CONSOLIDATION
- Expand attacks
- Expand political activity
- Enlarge forces
- Enlarge, link base areas

PHASE VI. CONFRONTATION
- Begin conventional war
- Continue guerrilla war

PHASE VII. COUP DE MAITRE
- Establish national government
- Eliminate political front allies
- Consolidate military-political dominance
- Eliminate former political elite

GOAL: POLITICAL CONTROL/REPLACEMENT OF SOCIOECONOMIC SYSTEM

SOURCE: Ibid. Table 2, P. 19.

TABLE 4

One-Commodity Countries (based on 1980–83 export average, market economies only)

Latin America and Caribbean

The Bahamas
Petroleum products
Bolivia
Natural gas (1983)
Colombia
Coffee
Ecuador
Crude petroleum
El Salvador
Coffee
Jamaica
Alumina
Mexico
Crude petroleum
Netherlands Antilles
Petroleum products
Suriname
Alumina
Trinidad and Tobago
Petroleum and products
Venezuela
Crude petroleum

Middle East Asia

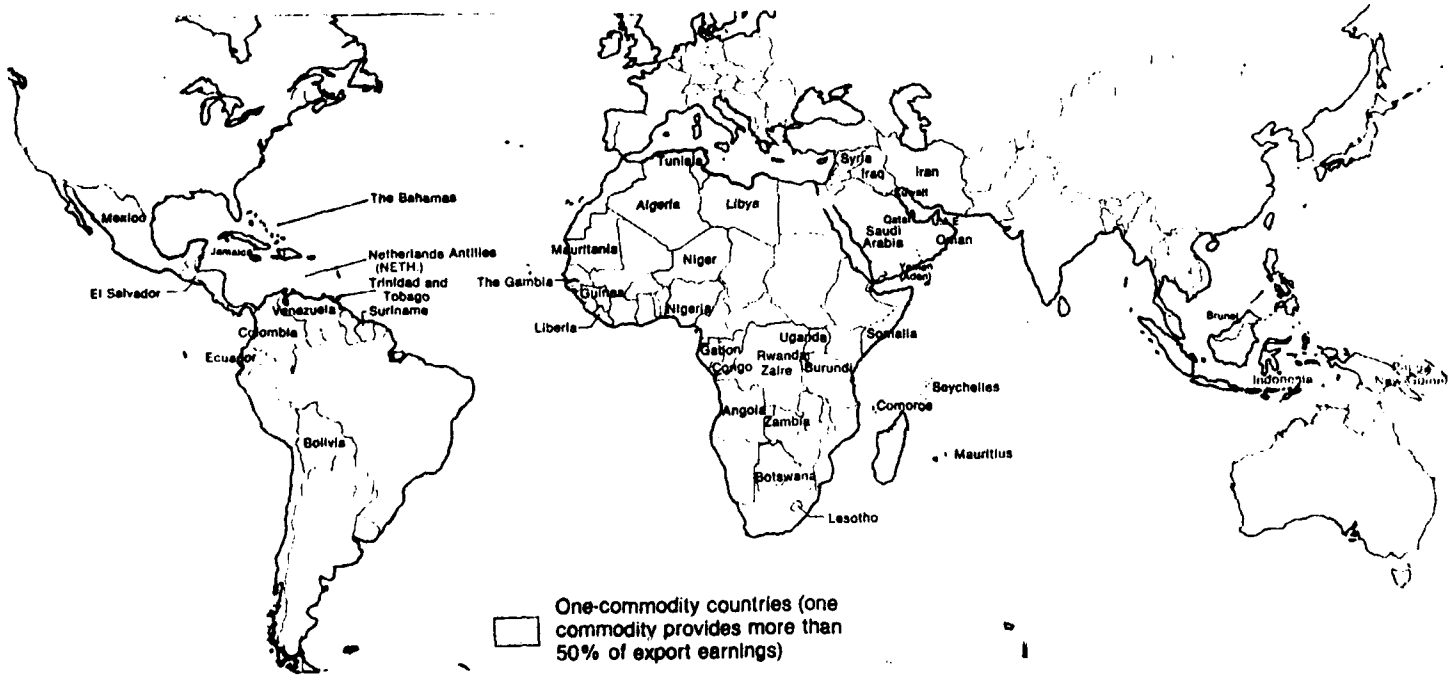
Iran
Crude petroleum
Iraq
Crude petroleum
Kuwait
Crude petroleum
Oman
Crude petroleum
Qatar
Crude petroleum
Saudi Arabia
Crude petroleum
Syria
Crude petroleum
United Arab Emirates
Crude petroleum
Yemen (Aden)
Petroleum products

Africa

Algeria
Crude petroleum
Angola
Crude petroleum
Botswana
Diamonds
Burundi
Coffee
Comoros
Cloves
Congo
Crude petroleum
Gabon
Crude petroleum
The Gambia
Groundnut products
Guinea
Bauxite
Lesotho
Diamonds
Liberia
Iron ore
Libya
Crude petroleum
Mauritania
Iron ore
Mauritius
Sugar
Niger
Uranium
Nigeria
Crude petroleum
Rwanda
Coffee
Seychelles
Copra
Somalia
Live animals
Uganda
Coffee
Zaire
Copper
Zambia
Copper

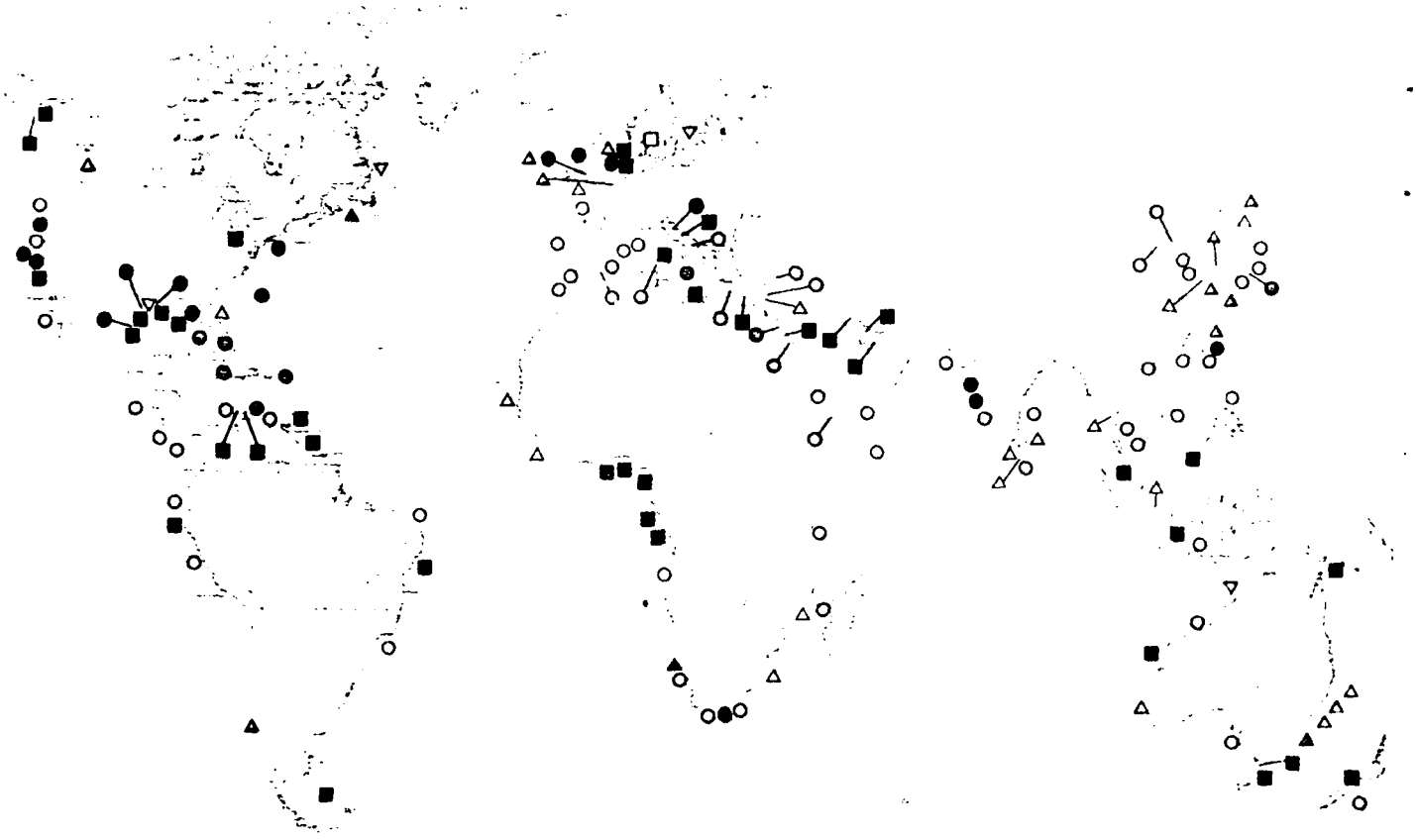
Asia/Pacific

Brunei
Petroleum and products
Fiji
Sugar
Indonesia
Crude petroleum
Papua New Guinea
Copper concentrate
Vanuatu
Copra



Source: Atlas of the United States Foreign Relations, United States Department of State, Washington DC., 1985. P. 51.

TABLE 5



■ oil
■ gas
△ tin
▽ iron
△ coal
○ salt

△ heavy minerals
▽ sulphur
▲ diamonds
□ magnesium
○ fresh water
● other minerals

oil and gas exploration

Undersea production
Man's commercial use of the ocean minerals is so far confined almost entirely to the continental shelves around the land.

SOURCE: The Earth and Man A Rand McNally World Atlas. Rand McNally and Co., New York, NY., 1972. P. 99.

TABLE 6

World Fossil Fuel Deposits

Fossil fuels are the world's main source of energy. Deposits are found in all continents but are not evenly distributed over the globe. At present consumption rates, known oil and gas reserves are expected to last for 30–50 years, coal reserves for at least 300.

Fossil fuels supplied 90% of world energy needs in 1978 and are expected to supply more than 75% of needs in the year 2000. The demand for coal has risen steadily since the oil price rises in the early 1970s. While coal supplied 18% of world energy needs in 1978 (compared with 54% for oil and 18% for natural gas), it is expected to supply about one-fourth of world needs in the year 2000. It is estimated that the United States will then account for about 50% of the world's coal output.

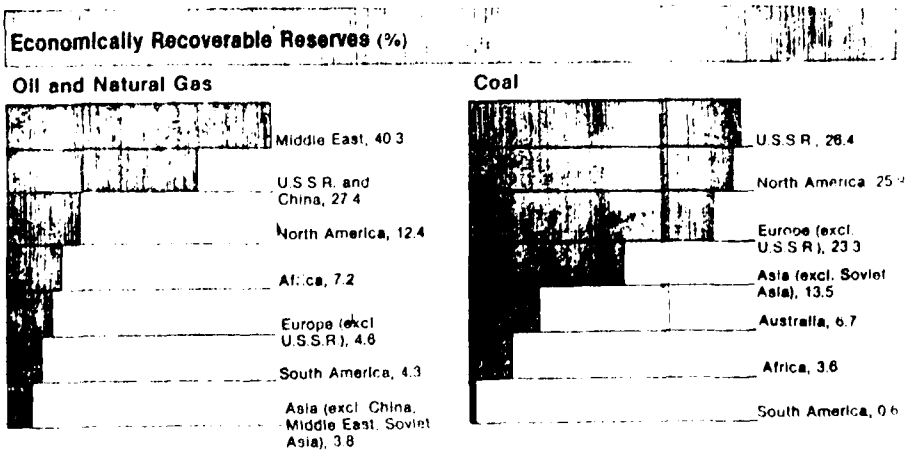
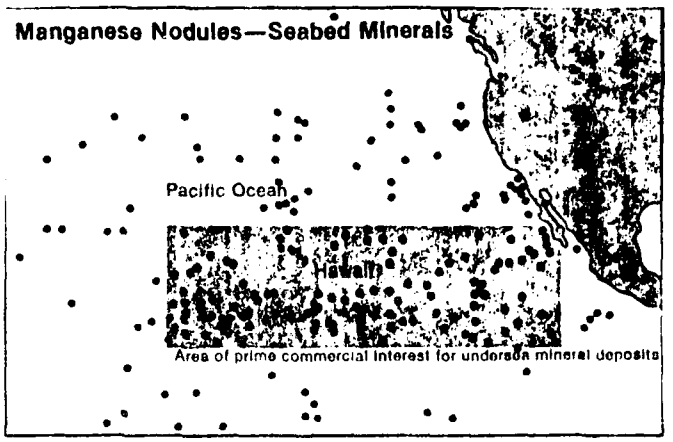
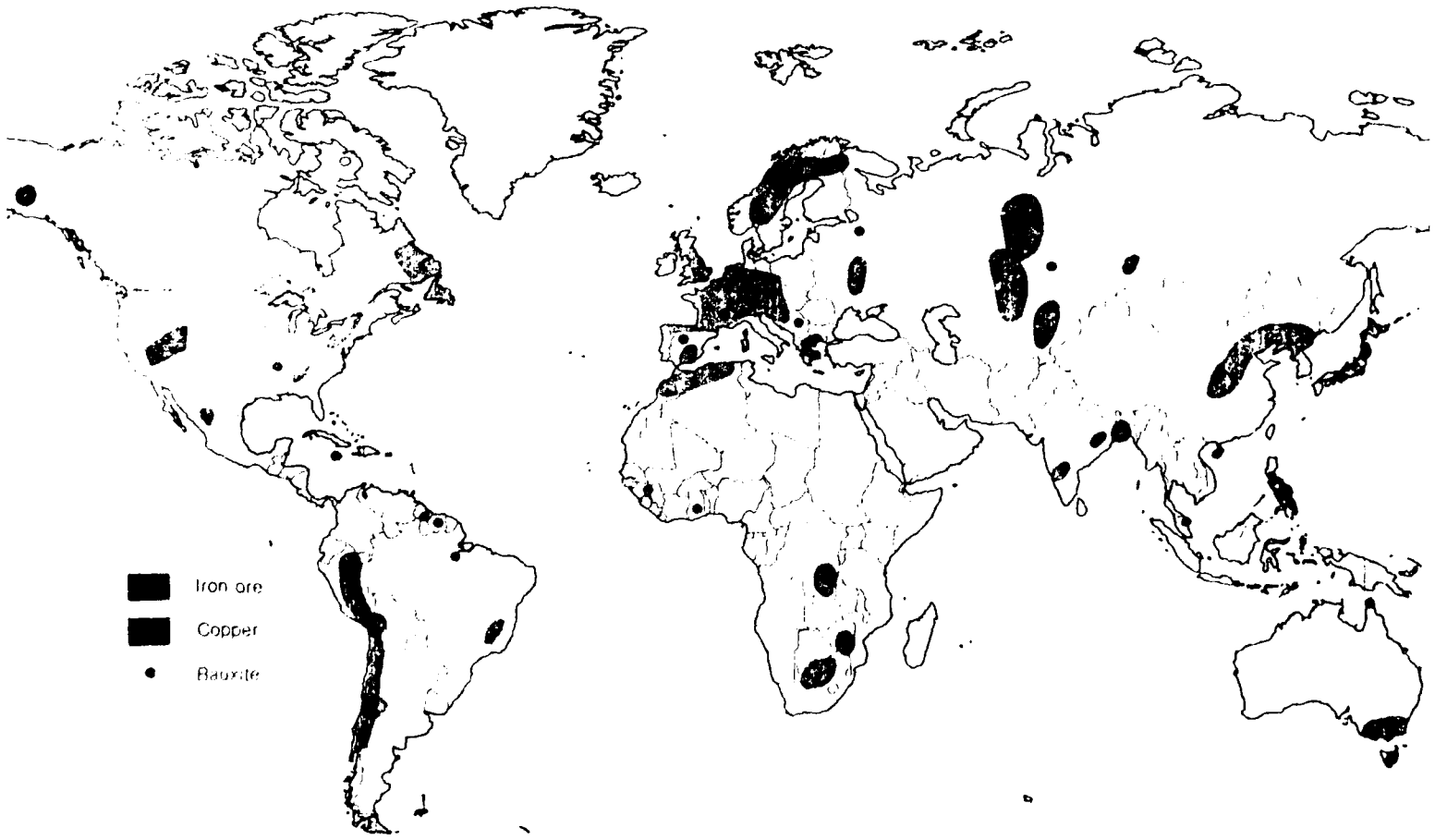


TABLE 7





SOURCE: Ibid, Table 1, P. 43.

TABLE 8

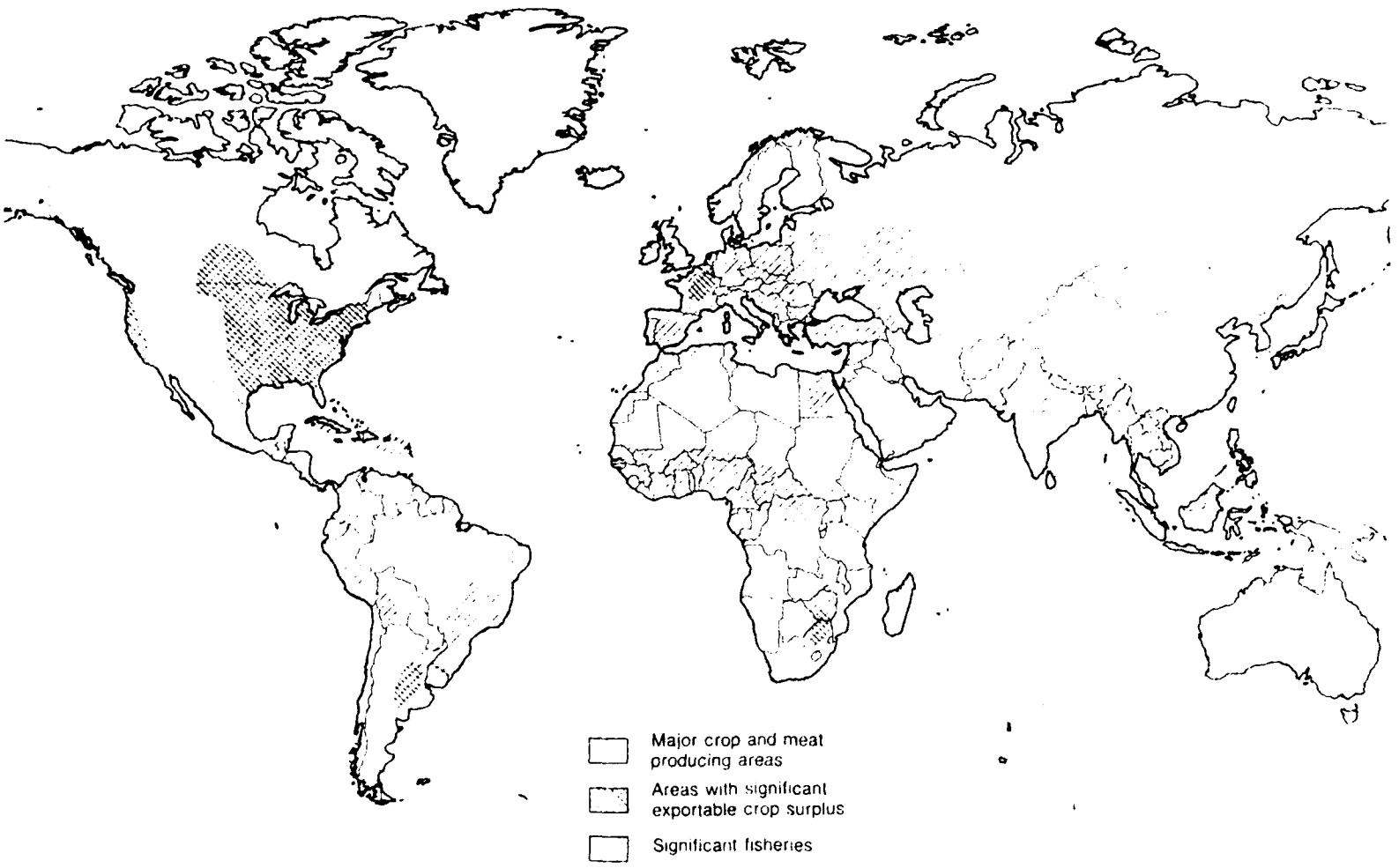
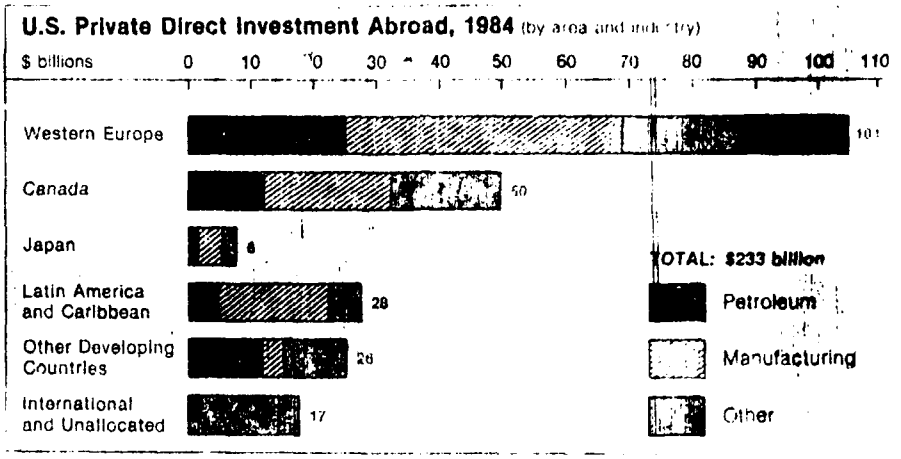
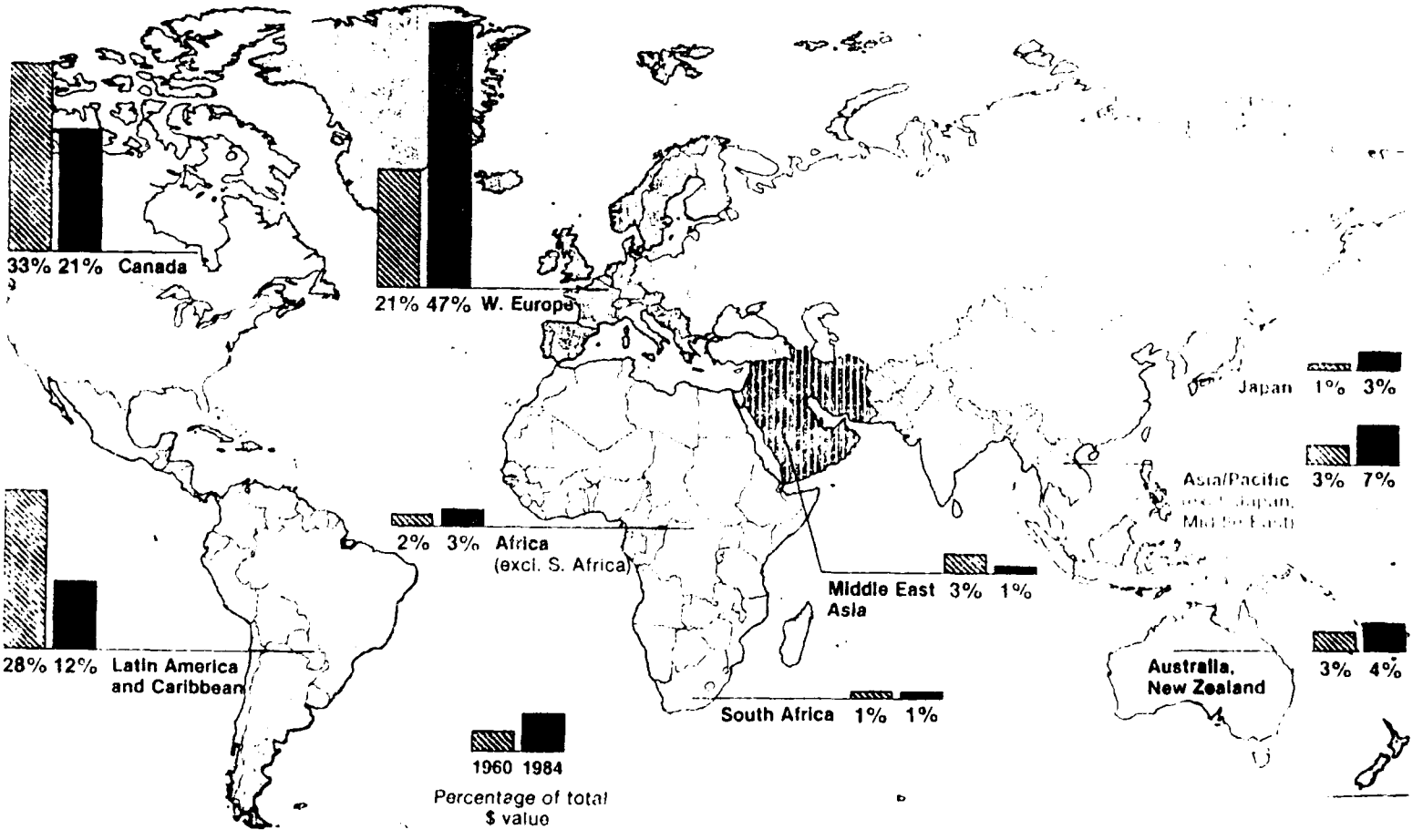

Major crop and meat producing areas
Areas with significant exportable crop surplus
Significant fisheries

TABLE 9





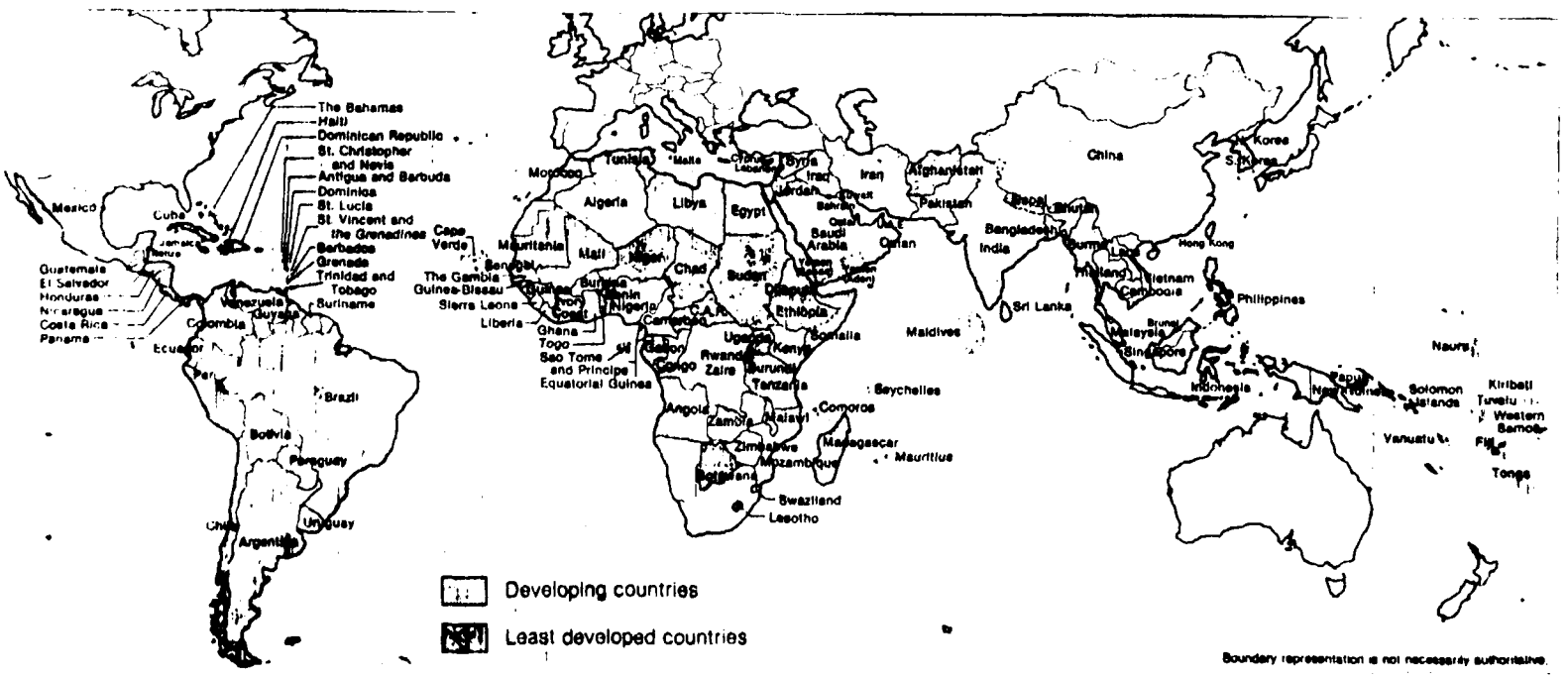
SOURCE: Ibid. Table 4, P. 60.

TABLE 10

Developing Countries

(Least developed countries are shown in boldface.)

Afghanistan
Algeria
Angola
Antigua and Barbuda
Argentina
The Bahamas
Bahrain
Bangladesh
Barbados
Belize
Benin
Bhutan
Bolivia
Botswana
Brazil
Brunei
Burkina
Burma
Burundi
Cambodia
Cameroon
Cape Verde
Central African Republic
Chad
Chile
China
Colombia
Comoros
Congo
Costa Rica
Cuba
Cyprus
Djibouti
Dominica
Dominican Republic
Ecuador
Egypt
Equatorial Guinea
El Salvador
Ethiopia
Fiji
Gabon
The Gambia
Ghana
Grenada
Guatemala
Guinea
Guinea-Bissau
Guyana
Haiti
Honduras
Hong Kong
India
Indonesia
Iran
Iraq
Ivory Coast
Jamaica
Jordan
Kenya
Kiribati
North Korea
South Korea
Kuwait
Laos
Lebanon
Lesotho
Liberia
Libya
Madagascar
Malawi
Malaysia
Maldives
Mali
Malta
Mauritania
Mauritius
Mexico
Morocco
Mozambique
Nauru
Nepal
Nicaragua
Niger
Nigeria
Oman
Pakistan
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Qatar
Rwanda
St. Christopher and Nevis
St. Lucia
St. Vincent and the Grenadines
Sao Tome and Principe
Saudi Arabia
Senegal
Seychelles
Sierra Leone
Singapore
Solomon Islands
Somalia
Sri Lanka
Sudan
Suriname
Swaziland
Syria
Tanzania
Thailand
Togo
Tonga
Trinidad and Tobago
Tunisia
Tuvalu
Uganda
United Arab Emirates
Uruguay
Vanuatu
Venezuela
Vietnam
Western Samoa
Yemen (Aden)
Yemen (Sanaa)
Zaire
Zambia
Zimbabwe



SOURCE: Ibid., Table 4, P. 69.

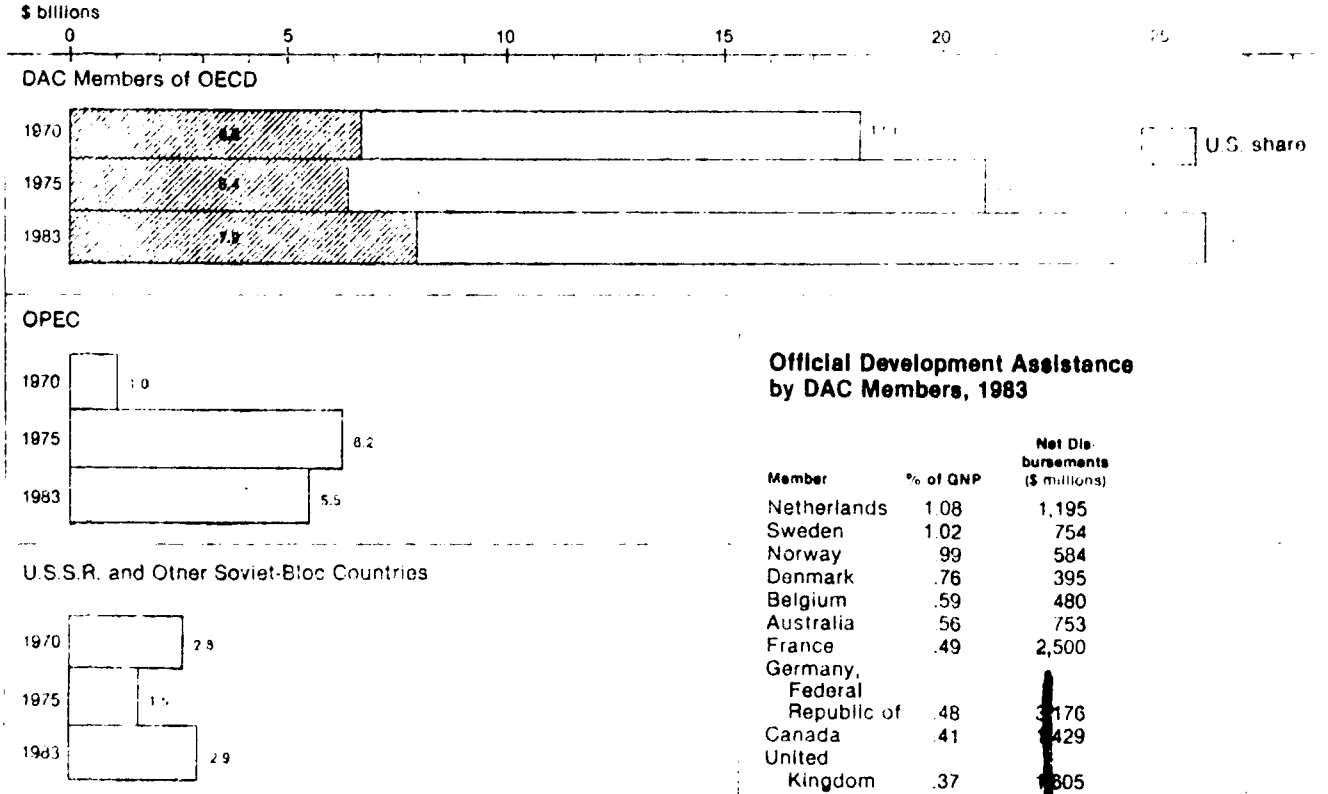
TABLE 11

Official development assistance is a technical term referring to the transfer of goods, services, or capital from one government to another to help the recipient develop its economy and raise its standard of living. One-quarter of such transfers must be in the form of grants, while loans and credits must be concessional, that is, given on a long-term, low-interest basis. Official development assistance also includes contributions to international agencies that finance development projects, such as the World Bank.

The Organization for Economic Cooperation and Development comprises 24 developed market economies. Seventeen of these countries, the organization's major foreign aid donors, belong to the Development Assistance Committee (DAC), where they consult on all foreign aid issues. U.S. foreign aid, though by far the largest as a sum, is smaller than most other members' as a percentage of gross national product.

Members of the Organization of Petroleum Exporting Countries (OPEC) began to provide foreign aid in the late 1960s. For several years their combined contributions did not exceed $500 million annually. After 1973—when oil price increases produced a sharp rise in OPEC revenues and (in 1974) added $10 billion to the oil import bill of other developing countries—OPEC foreign aid grew substantially. In the 1980s it has declined.

Official Development Assistance, 1970, 1975, and 1983 (net disbursements by calendar year)



Official Development Assistance by DAC Members, 1983

Member	% of GNP	Net Disbursements ($ millions)
Netherlands	1.08	1,195
Sweden	1.02	754
Norway	.99	584
Denmark	.76	395
Belgium	.59	480
Australia	.56	753
France	.49	2,500
Germany, Federal Republic of	.48	3,176
Canada	.41	1,429
United Kingdom	.37	1,805
Austria	.35	157
Finland	.30	153
Japan	.28	3,761
New Zealand	.28	61
United States	.27	7,992
Switzerland	.25	320
Italy	.24	827
Total DAC		26,142

WRI, Ref. Table 4, P. 70.

TABLE 12

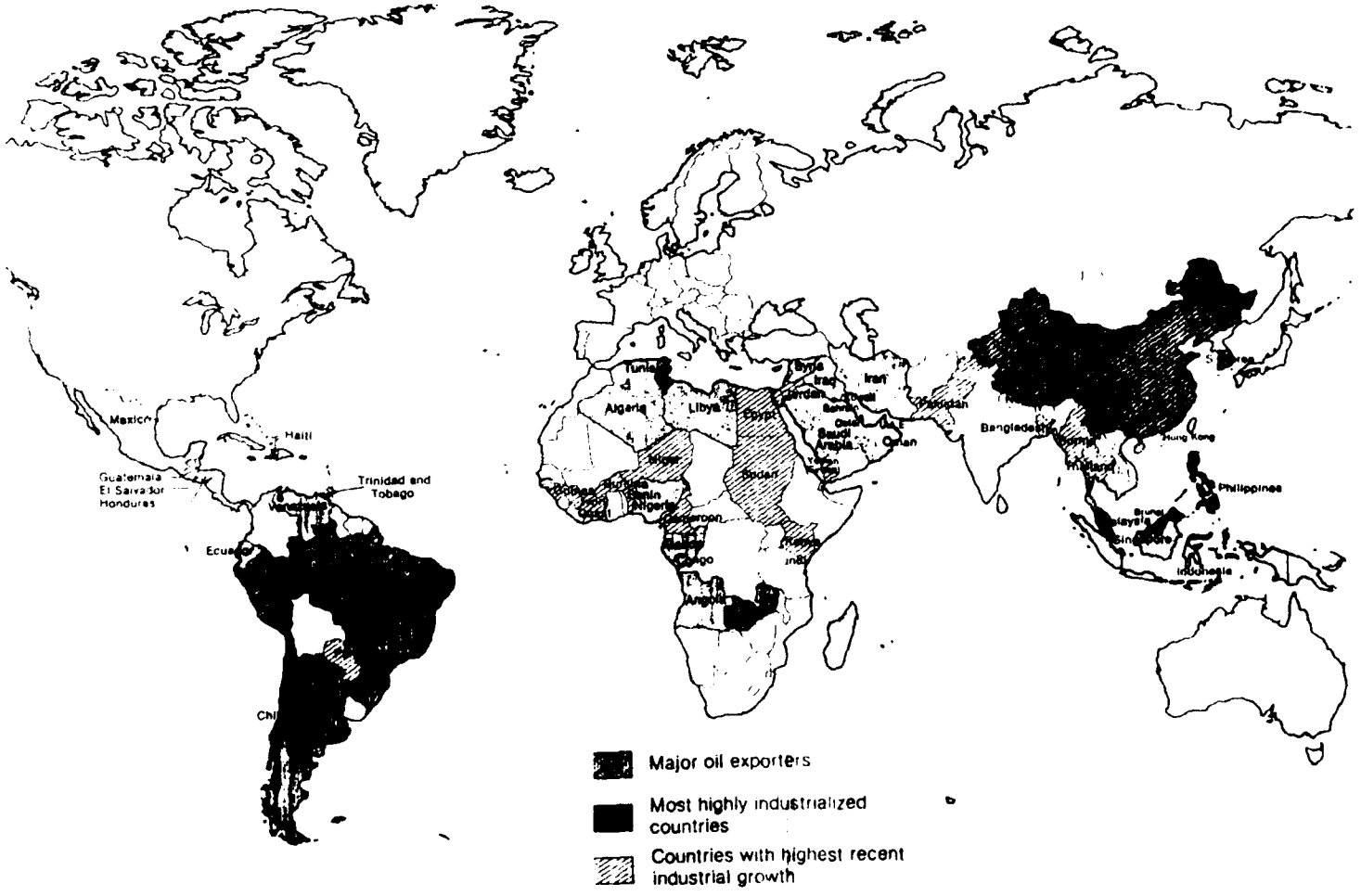
Multilateral Development Agencies

Institution	Year Established	Form of Aid	Expenditures or Authorizations, 1982 ($ millions)
World Bank Group			
International Bank for Reconstruction and Development (World Bank)	1944	Near-commercial-rate and some concessional loans for specific projects	10,309
International Development Association	1959	Concessional loans for projects in poorest developing countries	2,687
International Finance Corporation	1956	Loans to and equity investment in private enterprises	612
Regional Development Banks			
African Development Bank	1963	Near-commercial-rate and concessional loans for specific projects	428
Asian Development Bank	1965		1,661
Inter-American Development Bank	1959		1,947
Agriculture and Food Aid			
Food and Agriculture Organization of the United Nations	1945	Technical assistance in farm production and marketing	172
International Fund for Agricultural Development	1976	Concessional loans for projects to raise food production and reduce rural poverty	290
World Food Program	1962	Emergency food donations	505
Consultative Group on International Agricultural Research	1971	Techniques to improve crops and eliminate crop diseases	171[a]
UN Development Program	1965 (first predecessor, 1948)	Technical assistance in all fields in cooperation with other agencies	859
UN Fund for Population Activities	1972	Grants for all areas of population and family planning	106
World Health Organization	1946	Technical assistance for national health programs and emergency aid	180
			TOTAL: 18,927

[a]Includes special projects.

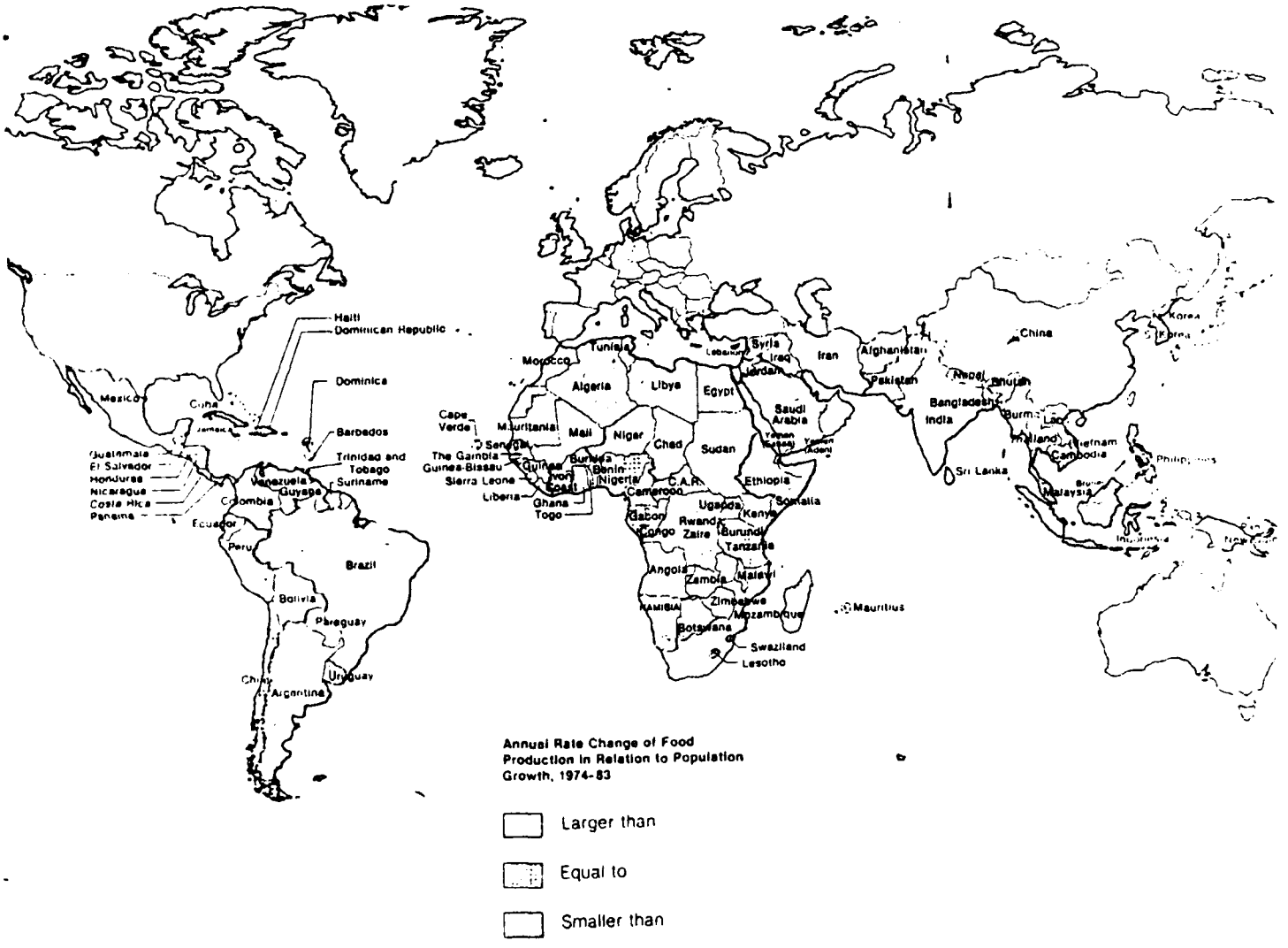
Source: Figures from Department of State, *United States Contributions to International Organizations: Report to the Congress for Fiscal Year 1983*, 1984; Agency for International Development, *U.S. Overseas Loans and Grants and Assistance from International Organizations: Obligations and Loan Authorizations July 1, 1945-September 30, 1984*, 1985; Consultative Group on International Agricultural Research

TABLE 13



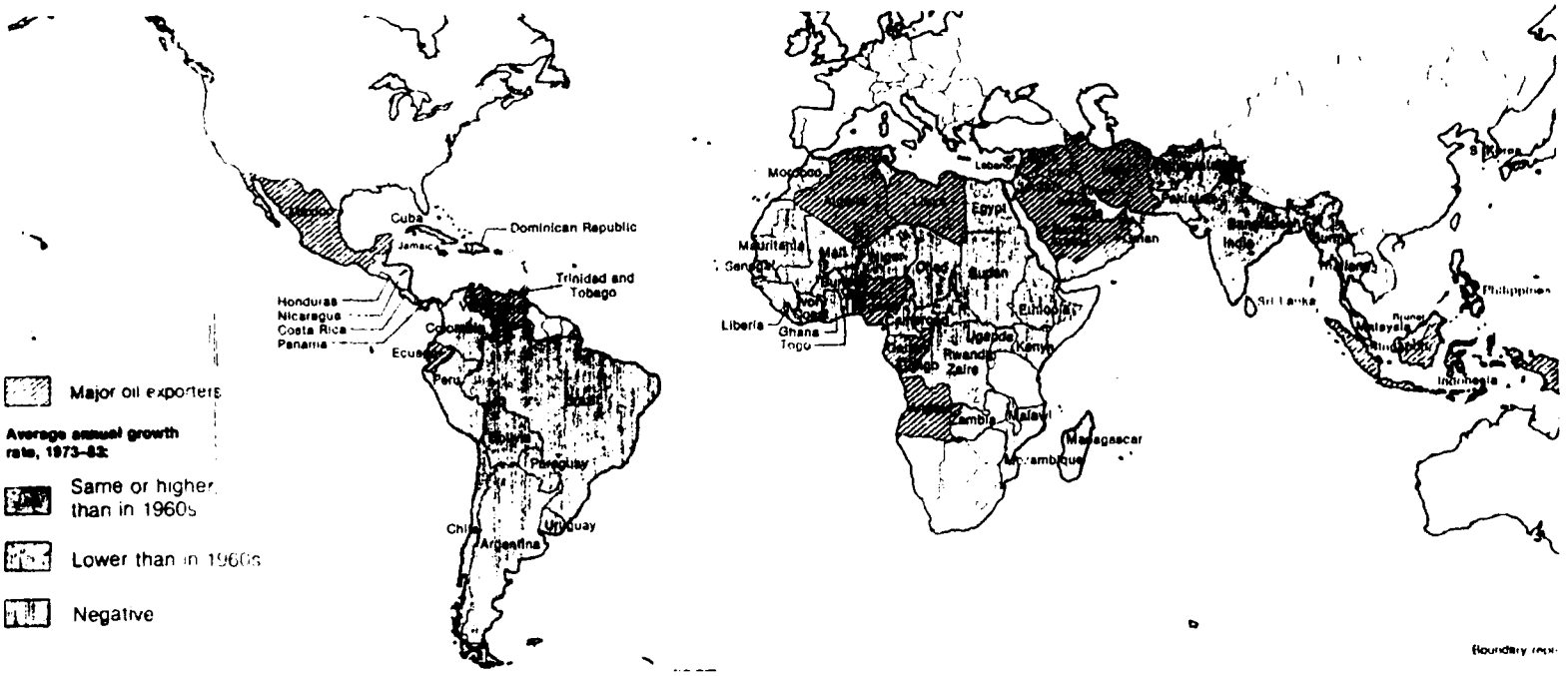
SOURCE: Ibid. Table 4, P. 73.

TABLE 14



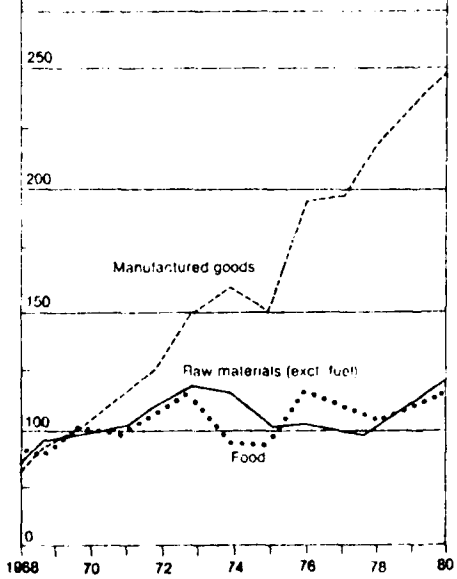
SOURCE: Ibid. Table 4. P. 74.

TABLE 15



Developing Country Exports to OECD Countries and South Africa, 1968-80

Volume change (1970 = 100)



Developing Country Markets, 1983

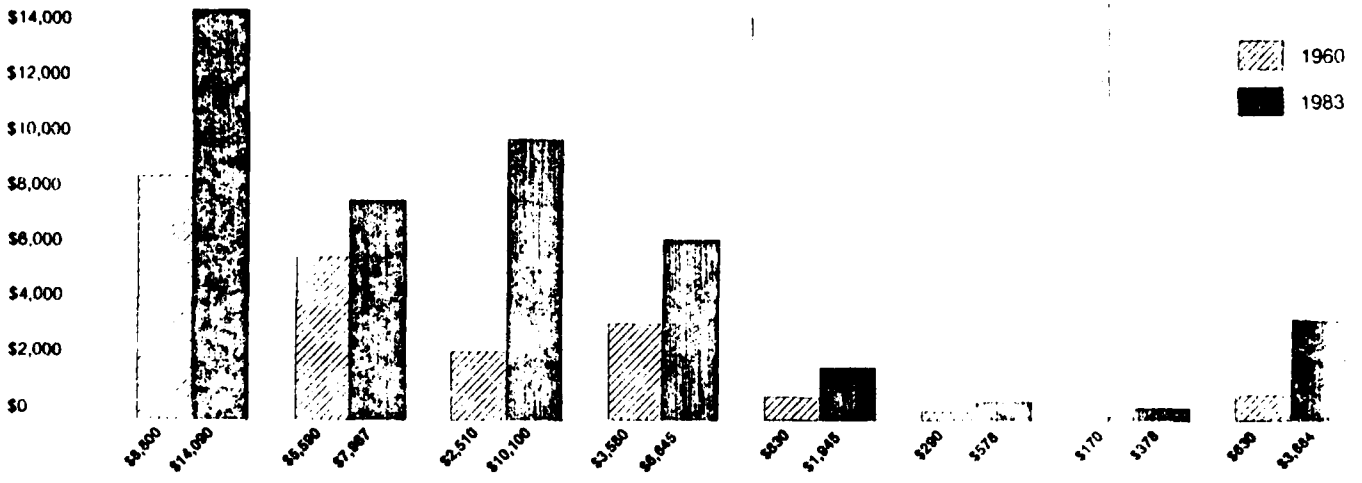
$ billions

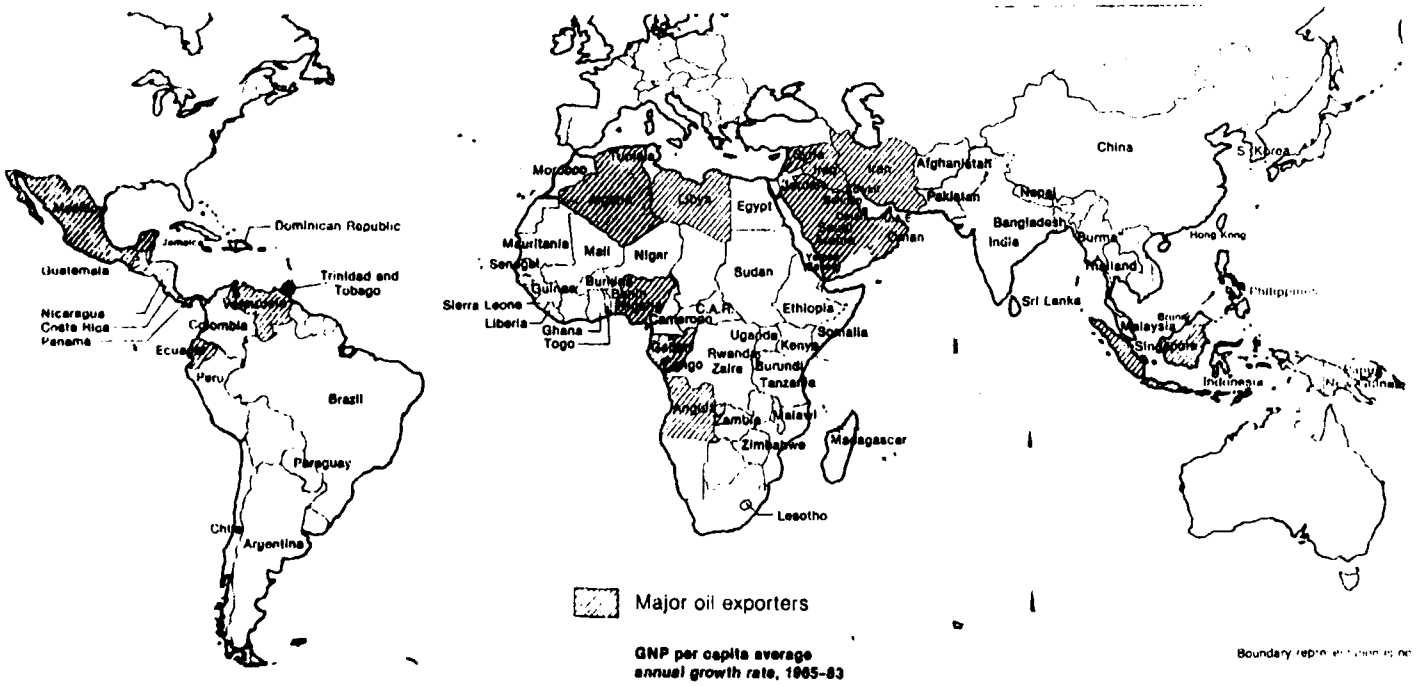
TOTAL EXPORTS	**492**
Exports to OECD members	308
Japan	*63*
United States	*52*
West Germany	*35*
Developing Countries	129
Soviet Bloc	29

SOURCE: Ibid. Table 4, P. 25.

TABLE 16

Regional Per Capita GNP, 1960 and 1983 (constant 1983 dollars)





Boundary representation is not necessarily authoritative.

[illegible] Table 1, p. 76.

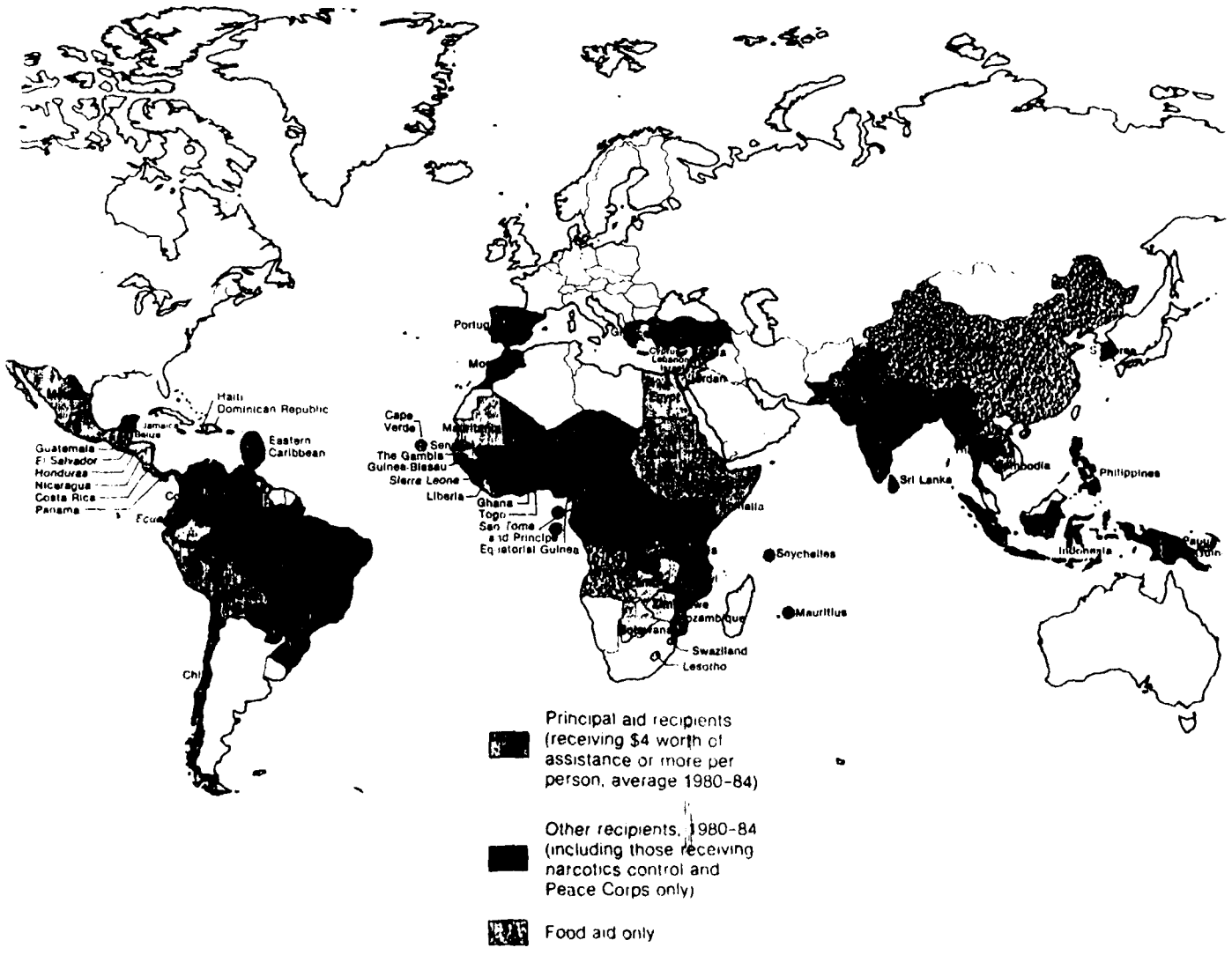
TABLE 17

U.S. Bilateral Economic Aid in the 1980s

U.S. bilateral aid in the 1980s continued to reflect the 1973 "new directions" policy of helping the poorest developing countries meet basic needs. There also was renewed emphasis on self-help and private-sector participation.

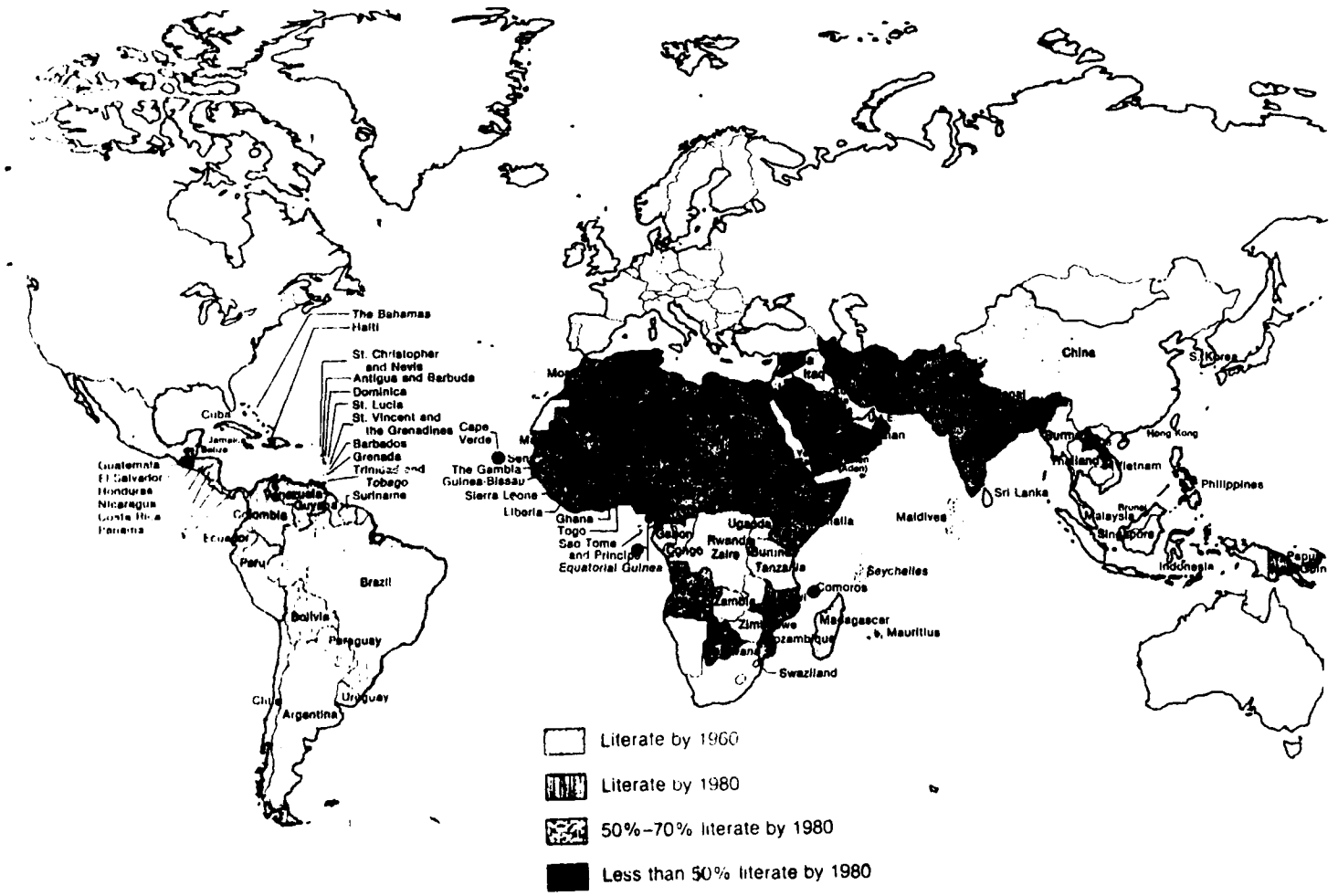
The Economic Support Fund (ESF) is the aid program providing loans and grants to countries of special security interest. ESF is the source of most of the aid to the largest recipients of U.S. economic assistance—Egypt and Israel. Not including ESF, more than 20% of U.S. economic aid goes to the least developed countries. Economies whose repayments of past development loans exceeded their aid receipts in the 1980s are Brazil, Chile, Colombia, Greece, South Korea, Spain, Taiwan, Uruguay, and Yugoslavia. (The United States has extended no economic assistance to Taiwan since 1964.)

In 1984 U.S. bilateral development assistance totaled $5.4 billion—0.14% of the gross national product



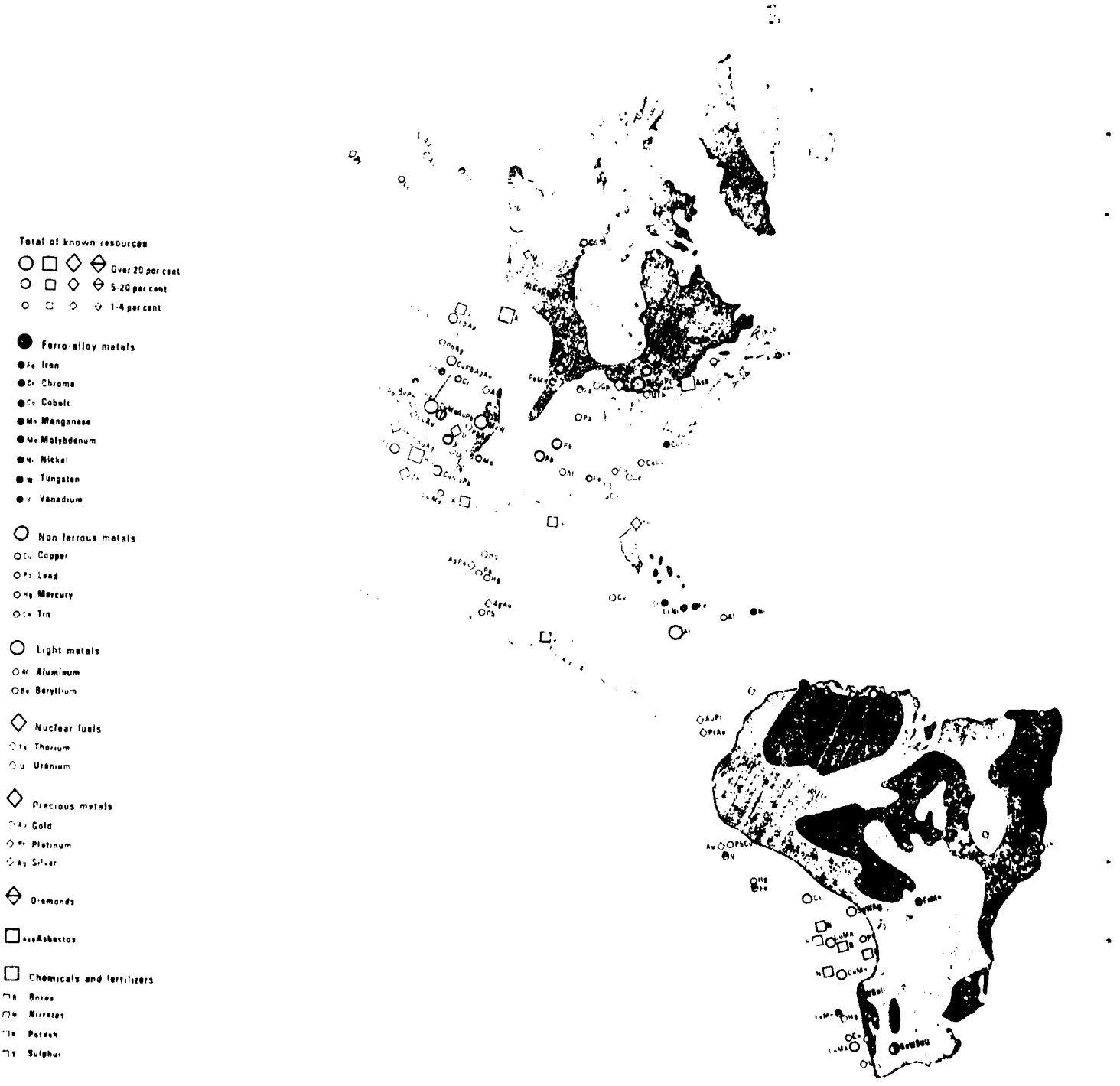
SOURCE: Ibid., Table 4, P. 81.

TABLE 18



SOURCE: Ibid. Table 4, P. 77.

TABLE 19A

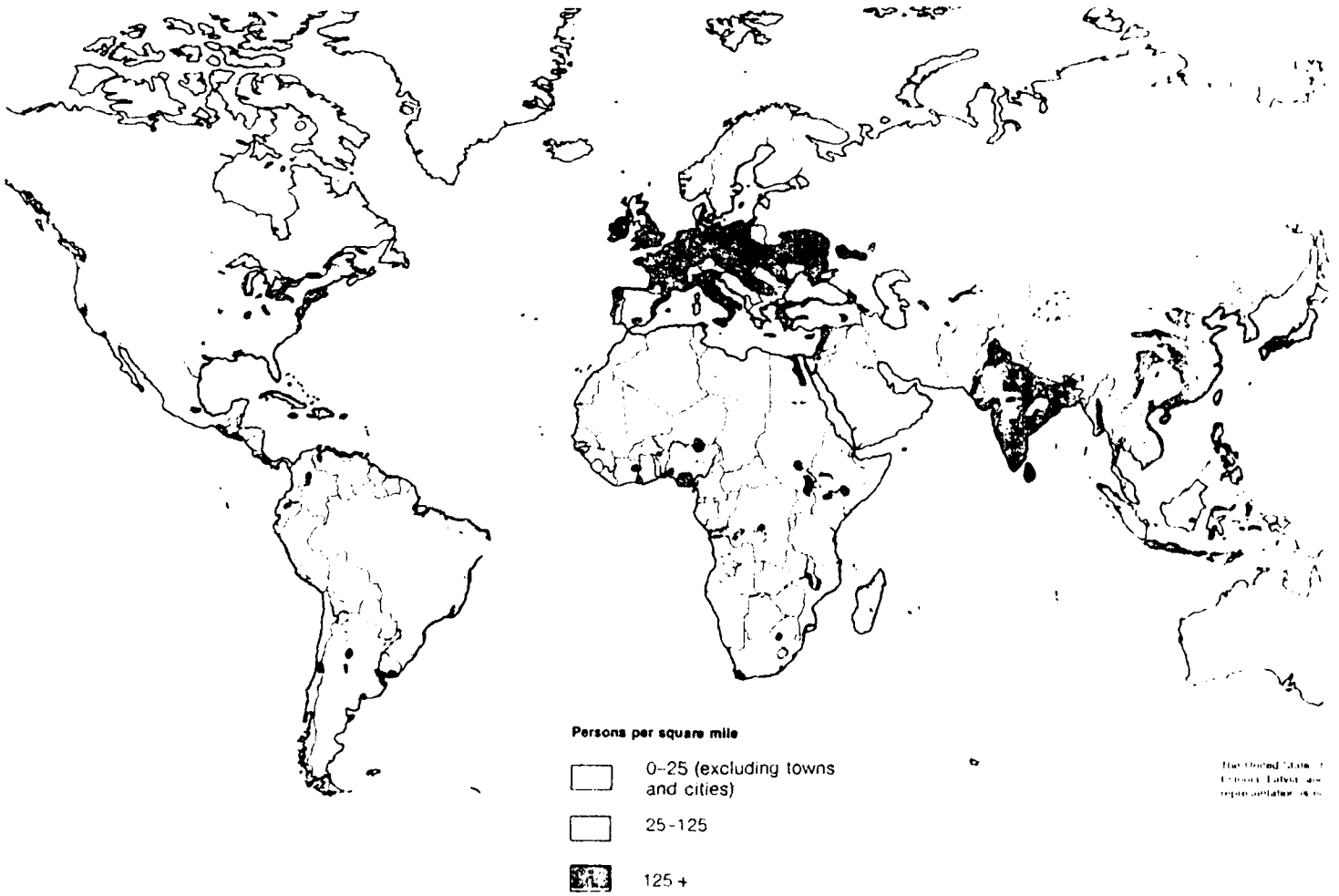


UNCED, Book 5, Table 5, P. 33A.

TABLE 19B

[illegible] Table 5, Fig. 19A.

TABLE 20



SOURCE: Ibid. Table 4, P. 46.

TABLE 21

AFRICA SOUTH OF THE SAHARA

23 TOTAL AIRFIELDS
13 10,000 WITH GOOD RAMP SPACE

CENTRAL AMERICA

39 TOTAL AIRFIELDS
28 10,000 WITH GOOD RAMP SPACE
(OVER ONE HALF ARE LOCATED IN THE CARIBBEAN ISLANDS)

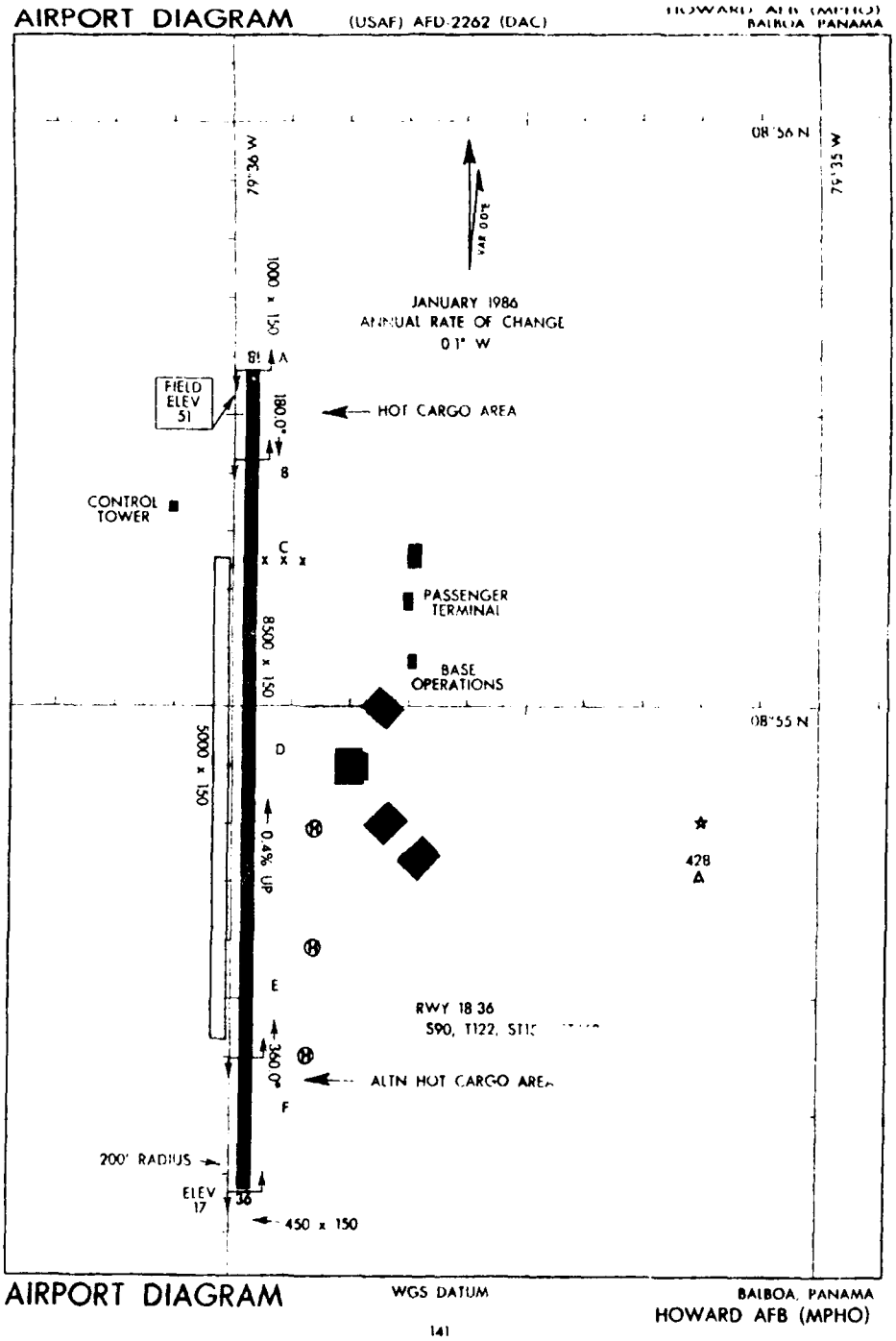
SOUTH AMERICA

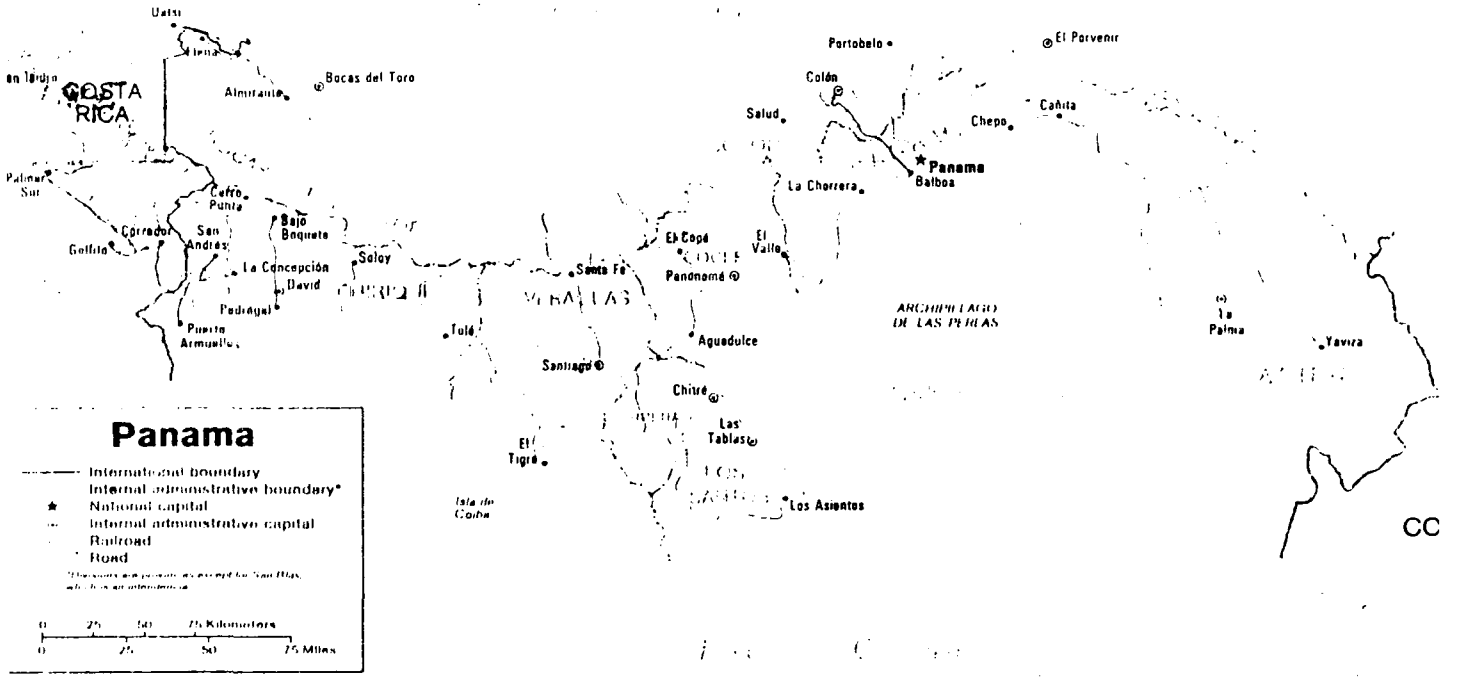
56 TOTAL AIRFIELDS
21 10,000 WITH GOOD RAMP SPACE

PACIFIC AND AUSTRALIA

61 TOTAL AIRFIELDS
38 TOTAL AIRFIELDS WHEN AUSTRALIA AND NEW ZEALAND ARE ELIMINATED
17 10,000 WITH GOOD RAMP SPACE (OUT OF THE 38)

SOURCE: High low Altitude (for the various regions) approach plates, 15 December, 1988, Defense Mapping Agency, St. Louis, Mo., 1988.

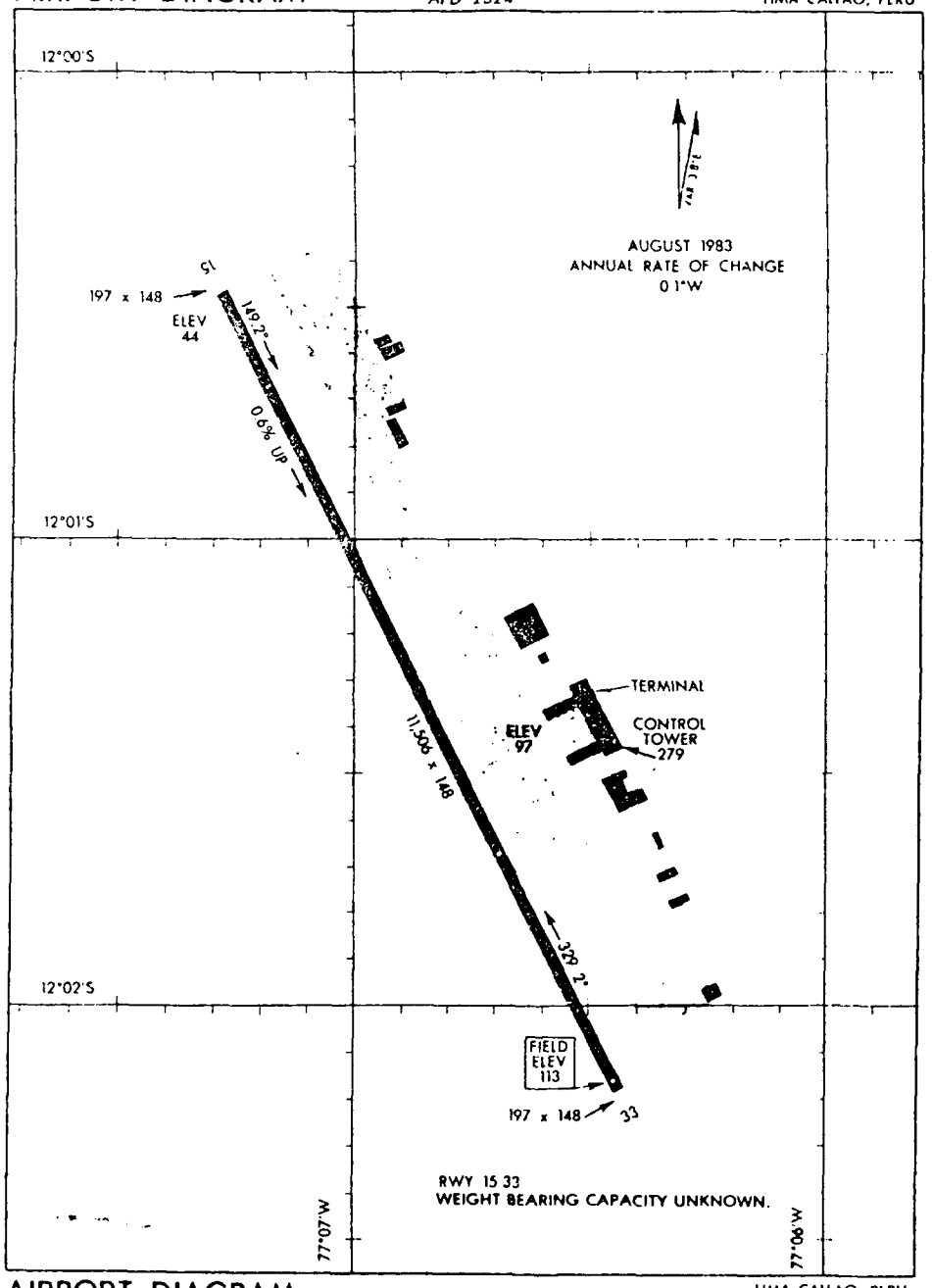

AIRPORT DIAGRAM
(USAF) AFD-2262 (DAC)
HOWARD AFB (MPHO)
BALBOA PANAMA
08°56 N
08°55 N
79°36 W
79°35 W
200 MAG
JANUARY 1986
ANNUAL RATE OF CHANGE
0.1° W
1000 x 150
18
A
FIELD ELEV 51
HOT CARGO AREA
1800'
8
CONTROL TOWER
C
PASSENGER TERMINAL
8500 x 150
BASE OPERATIONS
5000 x 150
D
0.4% up
428
E
RWY 18 36
S90, T122, ST1
2600'
ALTN HOT CARGO AREA
F
200' RADIUS
ELEV 17
36
450 x 150
AIRPORT DIAGRAM
WGS DATUM
BALBOA, PANAMA
HOWARD AFB (MPHO)


COSTA RICA
Bocas del Toro
Almirante
Palmar Sur
Golfito
Corredor
San Andrés
Cerro Punta
Bajo Boquete
La Concepción
David
Soloy
Puerto Armuelles
Tolé
Santa Fe
Aguadulce
Santiago
Chitré
Las Tablas
El Tigre
Los Asientos
Isla de Coiba
Portobelo
Colón
Salud
La Chorrera
El Copé
Penonomé
El Valle
Panama
Balboa
El Porvenir
Cañita
Chepo
ARCHIPIELAGO DE LAS PERLAS
La Palma
Yaviza
Panama
International boundary
Internal administrative boundary*
National capital
Internal administrative capital
Railroad
Road
0 25 50 75 Kilometers
0 25 50 75 Miles

AIRPORT DIAGRAM

AFD 2324

JORGE CHAVEZ INTL (SPIM)
LIMA CALLAO, PERU



AIRPORT DIAGRAM

WGS DATUM

LIMA CALLAO, PERU
JORGE CHAVEZ INTL (SPIM)

171

TABLE 20B

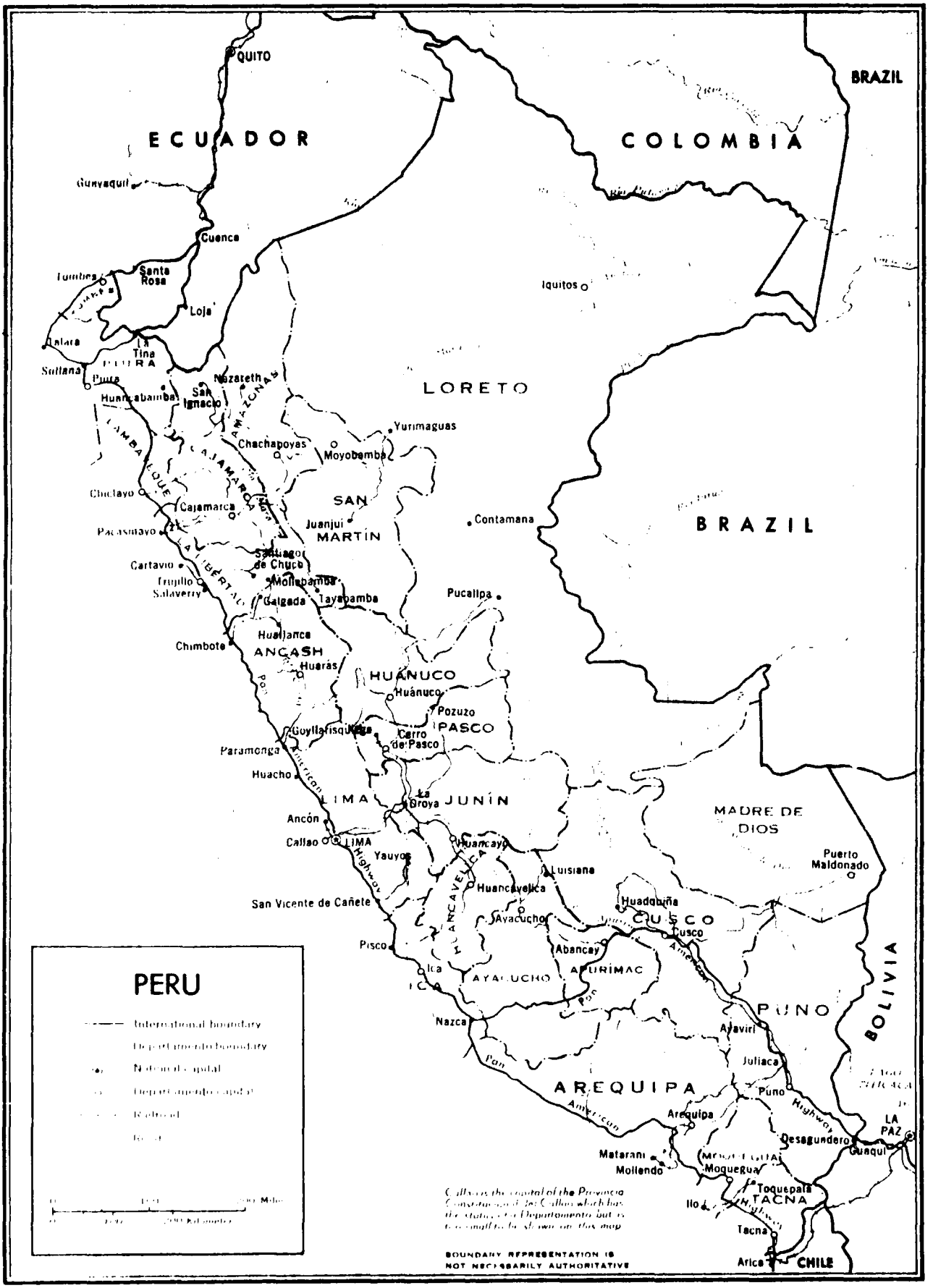
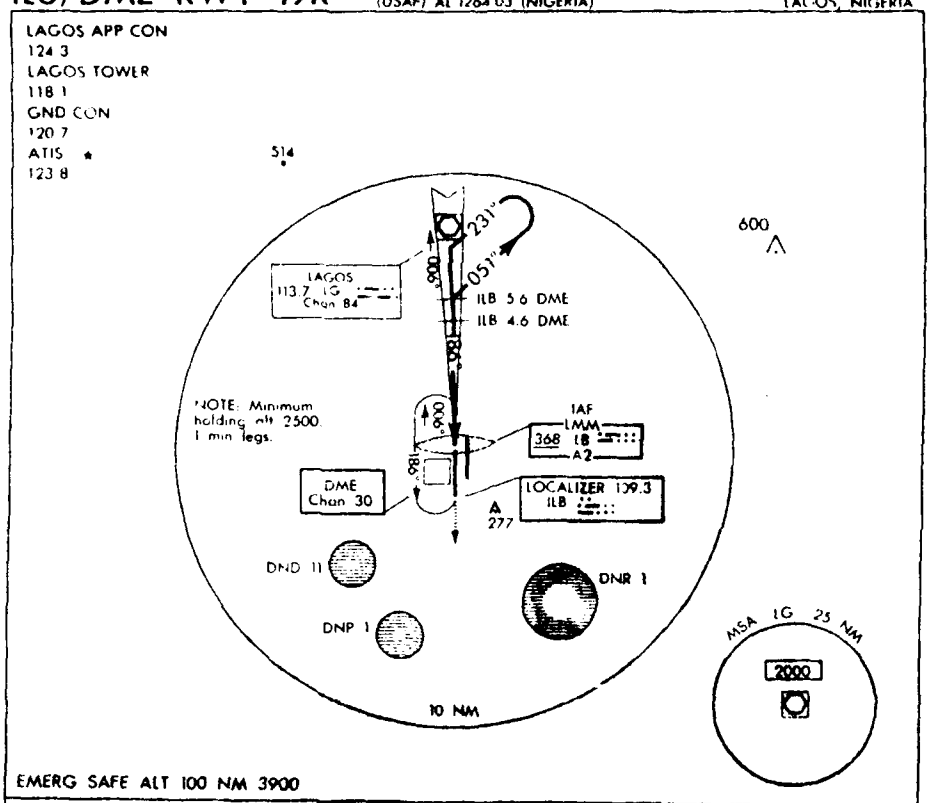

QUITO
ECUADOR
COLOMBIA
BRAZIL
Guayaquil
Cuenca
Tumbes
Santa Rosa
Loja
Iquitos
Talara
La Tina
PIURA
Sullana
Piura
Nazareth
San Ignacio
Huancabamba
AMAZONAS
LORETO
Yurimaguas
Chachapoyas
Moyobamba
LAMBAYEQUE
CAJAMARCA
Chiclayo
Cajamarca
SAN MARTIN
Juanjui
Contamana
BRAZIL
Pacasmayo
Santiago de Chuco
Cartavio
Trujillo
Salaverry
LA LIBERTAD
Mollebamba
Calgada
Tayabamba
Pucallpa
Huallanca
Chimbote
ANCASH
Huaras
HUANUCO
Huánuco
Pozuzo
PASCO
Goyllarisquizga
Cerro de Pasco
Paramonga
Huacho
LIMA
La Oroya
JUNIN
MADRE DE DIOS
Ancón
Callao
LIMA
Yauyos
Huancayo
Puerto Maldonado
Luisiana
Huancavelica
HUANCAVELICA
San Vicente de Cañete
Huadquiña
Ayacucho
CUSCO
Tusco
Pisco
Abancay
Ica
AYACUCHO
APURIMAC
PUNO
Nazca
Ajaviri
Juliaca
AREQUIPA
Puno
Arequipa
LA PAZ
Desaguadero
Guaqui
Matarani
Mollendo
Moquegua
Toquepala
TACNA
Ilo
Tacna
Arica
CHILE
BOLIVIA
PERU
International boundary
Department boundary
National capital
Department capital
Railroad
Road
Miles
Kilometers
Callao is the capital of the Provincia Constitucional del Callao which has the status of a Departamento but is too small to be shown on this map
BOUNDARY REPRESENTATION IS NOT NECESSARILY AUTHORITATIVE

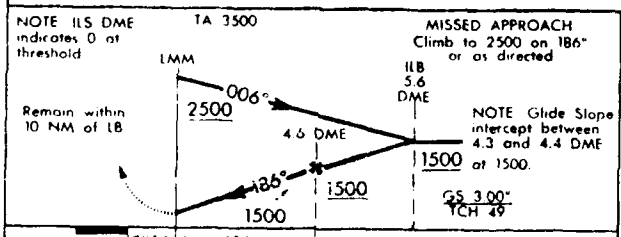
TABLE 3.1A

ILS/DME RWY 19R

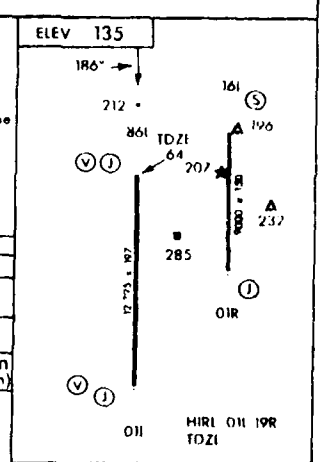
LAGOS/MURTALA MUHAMMED (DNMM)
(USAF) AL 1264 03 (NIGERIA) LAGOS, NIGERIA



EMERG SAFE ALT 100 NM 3900



CATEGORY	A	B	C	D
S ILS 19R	385 1600m	321	(300 1600m)	
S LOC 19R	500 1600m	436	(400 1600m)	
CIRCLING	700-1600m 565 (600-1600m)	800-1600m 665 (700-1600m)	900-3600m 765 (800-3600m)	1000-4400m 865 (900-4400m)



FAF to MAP 4.0 NM					
Knots	60	90	120	150	180
Min.Sec	4.00	2.40	2.00	1.36	1.20

ILS/DME RWY 19R

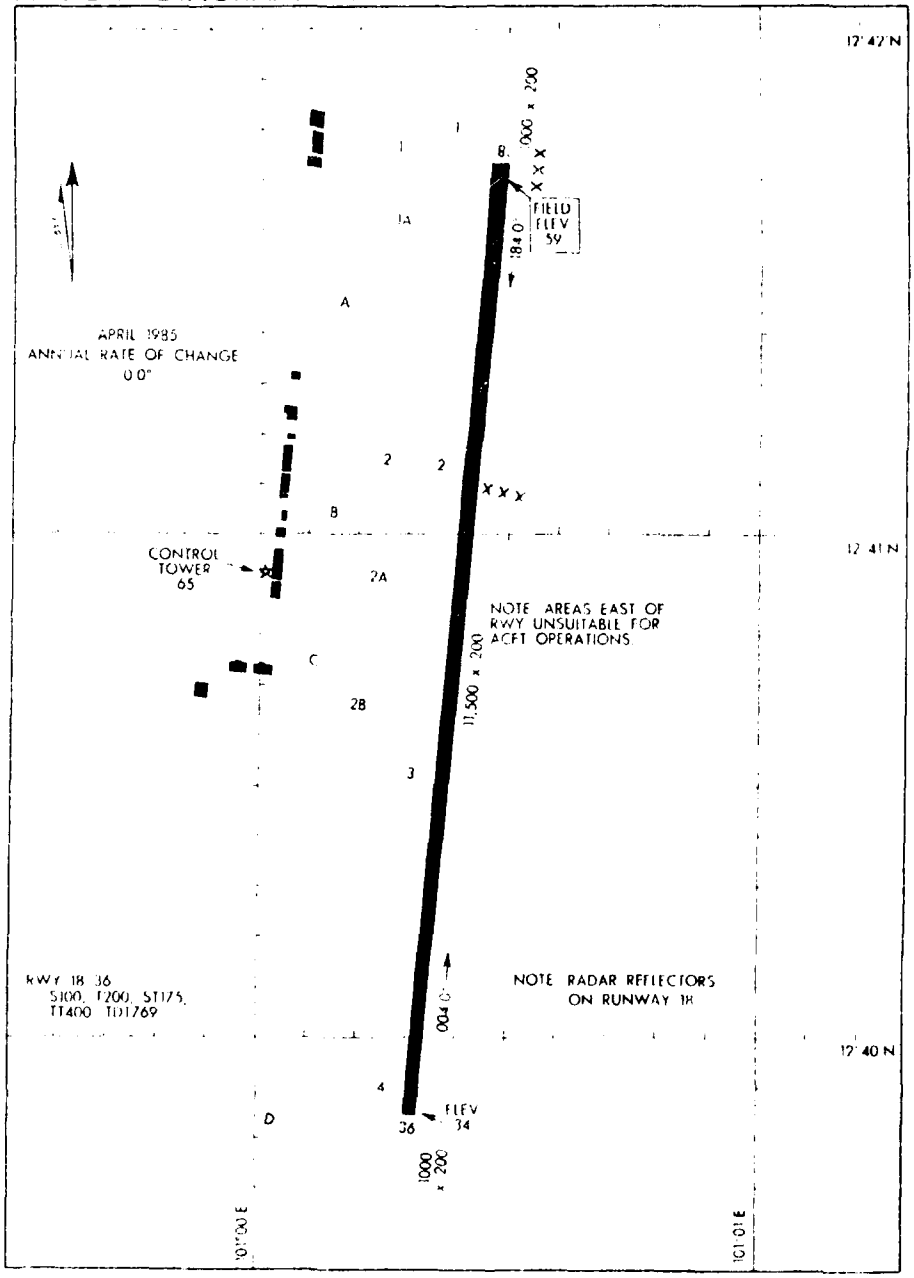
06°34'N 03°19'E
LAGOS, NIGERIA
LAGOS/MURTALA MUHAMMED (DNMM)


NIGER
CHAD
Niamey
Zinder
Nguigmi
Maradi
Dosso
Sokoto
Kaura Namoda
SOKOTO
Nguru
Kano
KANO
BORNO
N'Djamena
Damaturu
Maiduguri
Bama
UPPER VOLTA
Bijeu
Zaria
KADUNA
Kaduna
BAUCHI
Bauchi
Gombe
BENIN
Kontagora
Kainji Dam
NIGER
Jos
Figuil
Ndali
Wawa
Parakou
KWARA
Minna
Garoua
Yola
Kishi
Bida
Abuja
PLATEAU
Ilorin
FEDERAL CAPITAL TERRITORY
OYO
GONGOLA
Lokoja
Bali
Makurdi
Abeokuta
Ibadan
ONDO
Ngaoundéré
Bohicon
Porto-Novo
OGUN
Ondo
BENUE
CAMEROON
Ikeja
Benin City
Tibati
Cotonou
Lagos
Enugu
BENDEL
Onitsha
ANAMBRA
Ikom
Owerri
CROSS RIVER
Bafoussam
Warri
IMO
Port Harcourt
Calabar
Nkongsamba
RIVERS
Kumba
Victoria
Douala
Malabo
Edéa
Kribi
EQUATORIAL GUINEA
Bata
GABON
CONGO
Nigeria
International boundary
State boundary
National capital
State capital
Railroad
Hard-surfaced road
Loose-surface road
0 50 100 150 Kilometers
0 50 100 150 Miles

AIRPORT DIAGRAM

(USAF) AFD 2672 (TDOA)

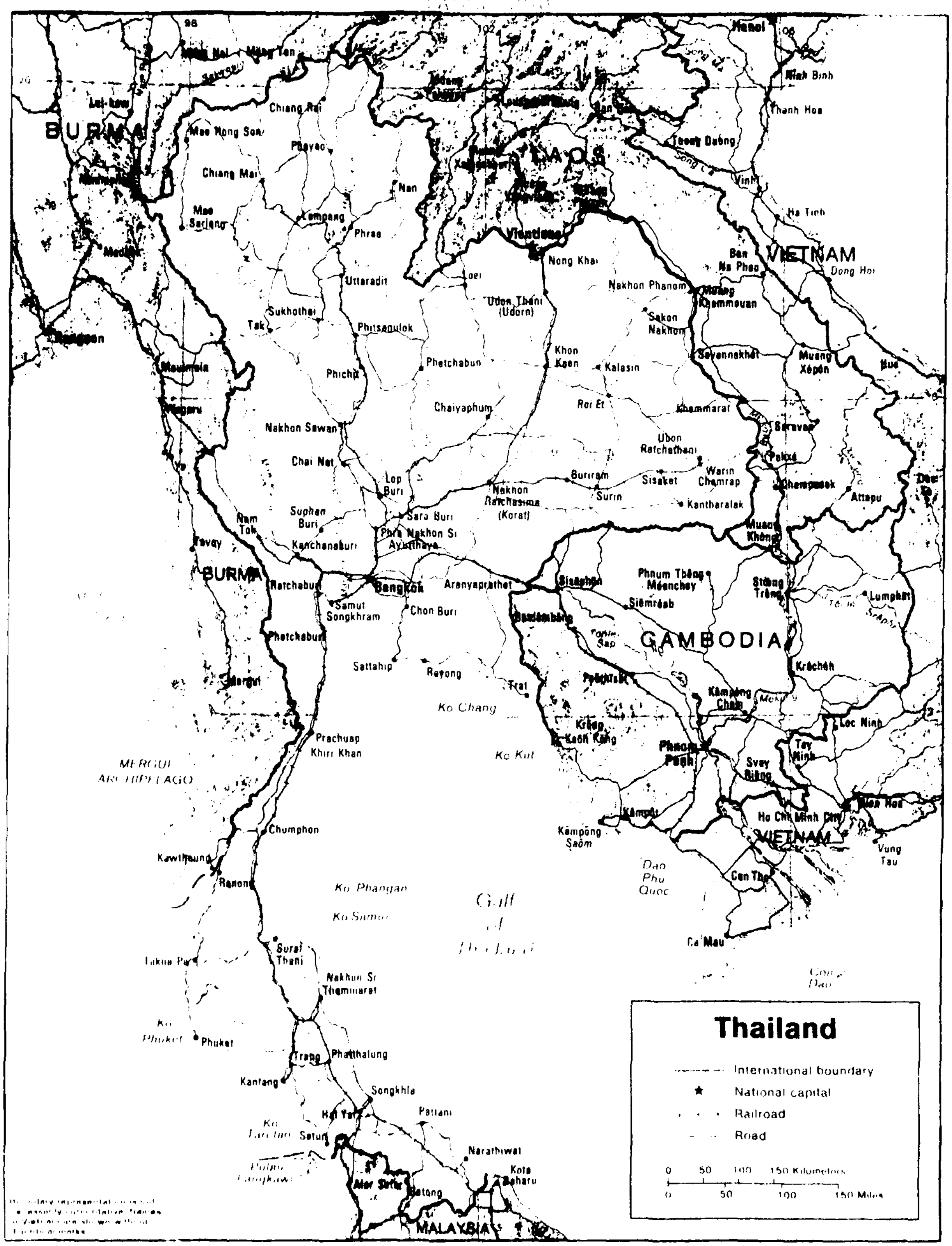
U TAPHAO INTL (VTBU)
U TAPHAO, THAILAND



AIRPORT DIAGRAM

WGS DATUM

U TAPHAO, THAILAND
U TAPHAO INTL (VTBU)



Thailand
International boundary
National capital
Railroad
Road
0 50 100 150 Kilometers
0 50 100 150 Miles
BURMA
LAOS
VIETNAM
CAMBODIA
MALAYSIA
Hanoi
Chiang Rai
Mae Hong Son
Phayao
Chiang Mai
Nan
Mae Sariang
Lampang
Phrae
Vientiane
Nong Khai
Uttaradit
Loei
Udon Thani
(Udorn)
Nakhon Phanom
Sakon Nakhon
Sukhothai
Tak
Phitsanulok
Phichit
Phetchabun
Khon Kaen
Kalasin
Savannakhet
Chaiyaphum
Roi Et
Khammarat
Nakhon Sawan
Ubon Ratchathani
Chai Nat
Lop Buri
Buriram
Sisaket
Warin Chamrap
Nakhon Ratchasima
(Korat)
Surin
Kantharalak
Attapu
Suphan Buri
Sara Buri
Phra Nakhon Si Ayutthaya
Kanchanaburi
Nam Tok
Tavoy
Ratchaburi
Bangkok
Aranyaprathet
Sisophon
Samut Songkhram
Chon Buri
Siemreab
Phetchaburi
Sattahip
Rayong
Trat
Ko Chang
Ko Kut
Kratie
Kracheh
Kampong Cham
Loc Ninh
Phnom Penh
Svay Rieng
Prachuap Khiri Khan
MERGUI ARCHIPELAGO
Mergui
Chumphon
Kawthaung
Ranong
Kampot
Kampong Saom
Ho Chi Minh City
Vung Tau
Dao Phu Quoc
Can Tho
Ca Mau
Ko Phangan
Ko Samui
Gulf of Thailand
Surat Thani
Nakhon Si Thammarat
Takua Pa
Ko Phuket
Phuket
Trang
Phatthalung
Kantang
Songkhla
Hat Yai
Pattani
Ko Tarutao
Satun
Narathiwat
Kota Baharu
Alor Setar
Betong
Vinh
Thanh Hoa
Ha Tinh
Dong Hoi
Hue
Muang Xepon
Saravan
Pakxe
Phnum Tbeng Meanchey
Stueng Treng
Lumphat
Tonle Sap
Moulmein
Rangoon
Mekong

TABLE 26

MARINE AMPHIBIOUS BRIGADE (MAB) AIRCRAFT ASSIGNED

20	AV-8B
24	F-18
10	A-6
4	EA-6
4	RF-4B
5	OA-4M
6	OV10

AIR FORCE COMPOSITE SQUADRON *

20	A-10
24	F-16
14	F-15
6	OV-10

* The reduced number of Air Force aircraft is due to the dual capabilities of the various aircraft the enhached capability of the A-10 over the AV-8Bs, and the differences in employment tactics.

TABLE 27

CRITICAL ITEMS LIST DECISION SUPPORT SYSTEM

The items contained in this data base are items that would have major mission impact if they were not available, have long production lead times and are high cost items. This system would contain the following information on the items:

a. Inventory levels required.
b. Procurement cost and funding data.
c. Items that could be substituted for this item.
d. Location of other sources (other wings and their levels).

The system would then evaluate various possible scenarios and determine the requirements for WRM spare kit levels. Once this was determined the composite wings spares levels would be set.

TABLE 28

(COST PER FLYING HOUR EXCEPT FOR SUPPORT EQUIPMENT)

MDS	BASE(1)	DEPOT(2)	SPARES(3)	SUPPORT EQUIPMENT(4)
A-7	330	649	479	37000
A-10	210	238	351	21000
F-4E	600	527	331	47000
F-111E	630	1479	1996	67000
F-15C	500	984	1585	78000
F-16C	340	670	833	37000

1. These include base maintenance and base consumable material costs.

2. These include depot maintenance and consumable material cost.

3. This is the cost per flying hour for reparable spare parts (LRUs and SRUs).

4. Support equipment costs are on a squadron basis.

SOURCE: Air Force Manual 173-13, Air Force Cost Analysis Program, HQ USAF, Washington DC., 16 February, 1987. Table 2-13.

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